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THOMAS A. EDISON

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THE WHOLE FORMING A

COMPLETE GUIDE AND SELF-INSTRUCTOR

ON SCIENTIFIC, COMMERCIAL, HISTORICAL, ARTISTIC AND ALL OTHER SUBJECTS

BY HENRY DAVENPORT NORTHROP

Author of "Story of the New World," "Golden Manual," "Peerless Reciter," Etc., Etc.

Magnificently Embellished with 350 Fine Engravings

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Preface

ALL Useful Information on all Subjects and for all People, truthfully describes this new and peerless volume. The first subject treated is Education, the Training of Mind and Body. How to Write and Speak Correctly comes next, including full instructions in Penmanship, Grammar, Elocution, Delsarte System of Physical Culture and Expression, Synonyms and Antonyms. How to Remember, or Loisette's Famous Memory System, is fully explained.

Courtship and Marriage should be carefully read by all parents and young people. In glowing, eloquent language it teaches the true Relations of the Sexes, the Laws of Love, How to Choose a Wife or Husband, what Temperaments should Marry, how to make Married Life Happy, how to avoid the mistakes and follies of love-making, how to plant and nurture that sweetest and most beautiful of all flowers, domestic bliss.

Helps for Housekeepers may be said to form a volume by itself, including the Care of Plants, Flowers and Household Pets; a very large and choice collection of the newest and best Receipts for all kinds of Cooking, Renovating Clothing, Furniture, etc., and for Cosmetics.

Good Health and How to Preserve It. is fully treated, with more than fifty Graphic Illustrations of Gymnastics, showing how to develop and strengthen every part of the body. This is followed by What to Do in Emergencies, in other words, How to Save the Lives of Persons in danger from accidents, poisons, etc. This is followed by Etiquette of Polite Society; the Art of Correspondence, including Forms for Letters; Sports and Pastimes, etc.

Then come The Largest Things on the Globe—the Highest Mountains, Longest Rivers, Largest Trees, Buildings, etc.; Greatest Inventions, Earthquakes, Conflagrations, Works of Art, Libraries, Railroad Magnates, Land-owners, etc. Would you know the Date of any Important Occurrence? Here is the full list, a history by itself.

The reader now beholds, depicted in brilliant colors, the Grand Panorama of Nations—the Countries of the World, containing Historical, Geographical and Statistical Information—the Proud Achievements of Great Discoverers, Navigators, Commanders, Statesmen, and Patriots, with the Laws, Customs and Thrilling Events, comprising a full description of all Civilized Countries.

The Latest Discoveries in Electricity; the Wonders of Astronomy; Photography by the new X-Rays; Phenomena of Light; Famous Gems; Indoor Amusements; Weather and Weather Signals, are among the multitude of subjects fully treated. Then comes a Vast Compendium of Curious Facts, gathered from History, Science, Literature, Treasures

of Art; Discoveries of every description; all arranged and presented in a form most convenient for the reader. This part of itself is a vast storehouse of practical knowledge.

The Department of Business includes the Best System of Book-keeping ever taught in America, and can easily be learned by every boy and girl. This is followed by full instructions showing How to Do Business, and furnishing Forms for Notes, Checks, Drafts, etc. The convenience of having these in correct form is apparent to all who have business to transact.

Every man should have such information as will enable him to be his own lawyer, and with this volume, which contains a full set of Legal Forms, he has a Hand-Book of Law that is always ready for use. Here are forms for Agreements, Mortgages, Contracts, Wills, Leases, all in the correct phrascology and suitable for reference or copy. Full directions are given for drawing Notes, Checks, Drafts, etc., and forms are given.

The Lightning Calculator shows at a glance the cost of any article at any price; and it never makes a mistake. This is a vast saving of time and trouble, enabling one to make reckonings almost instantly without going through the tedious process of multiplication, addition and division. In short, this volume is a time-saver, a practical help and is prepared and intended for constant use in every household.

There is a vast collection of Important Facts, relating to the Government of the United States; Presidents and Vice-Presidents; Electoral Votes; Discoveries and Settling of Countries; Wealth of the Principal Nations; Money and How to Make It; Value of Metals; Interest Rules and Tables; Exports of Various Countries; Tables of Mortality; Tables for Telling the Age of any Person; Percentage of Nutrition in Various Articles of Food, etc., etc. This part is an encyclopedia, stored with the most useful information, while at the same time it is full of entertainment for all readers.

Every one prizes a book that puts much into a small space; that conducts the reader at once into a flower garden, and does not compel him to roam through acres of weeds before coming to a single blossom. This peerless work has gems of knowledge on every page, and the part containing facts for reference is both a surprise and delight.

The Population of the United States during the Nineteenth Century is shown by a comprehensive table, which is interesting to all intelligent readers. Here the marvellous growth of our country is fully shown, as "westward the course of Empire takes its way." This table is one of the most suggestive in the volume.

This outline, necessarily brief and imperfect, will aid the reader somewhat in forming an estimate of the Contents, which cover every subject of importance and value. A full Index completes the volume.

The publishers feel that the effort to furnish a complete and comprehensive work that is a fountain of unlimited knowledge and a self-educator on every subject upon which the reader needs to be informed, has been entirely successful. The vast stores of information are drawn from sources that are accurate and reliable, thus rendering this volume a standard work. Moreover, it is fully up to date, containing the latest discoveries in every department of science, history, education, and all other branches of knowledge.

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EDUCATION

The Training of Mind and Body

AMONG the wise and pithy sayings of one of our best known modern writers is this: If a man empties his purse into his head, no man can take it away from him. An investment in knowledge always pays the best interest.

It is by diligent attention to this rule that the highest success is gained. It is impossible to have the noblest type of man, physically, intellectually or morally, without education. An uneducated ploughboy cannot reach the commanding heights of the widest influence; with education he may rise to the highest position his country can bestow.

The biographies of the greatest statesmen, scholars, men of letters, philosophers and others who have gained distinction, invaribly represent them as possessed of an eager thirst for knowledge. Sir Isaac Newton was in the habit of spending whole nights in the study of astronomy and the laws that govern the heavenly bodies. Without such close application he could not have made those immortal discoveries which have been the wonder of all thoughtful minds from his time until the present.

It is the observation of one of our modern writers that a human being is not, in any proper sense, a human being until he is educated. Thus his slumbering faculties are aroused. The magnificent displays of knowledge dawn upon him as the morning light brings beauty and fruitfulness to the earth. The word education means to train, to instruct, to awaken our faculties to action; or, taking the word in its primary sense, it means "to draw out." It aims at the growth and highest possible culture of the whole man, and the most valuable means for securing this grand result are found in books of useful knowledge and information. These are the tools with which the rough block is chiselled into symmetry and beauty.

The fruits of the earth do not more obviously require labor and cultivation to prepare them for our use and subsistence, than our faculties demand instruction and regulation in order to qualify us to become upright and valuable members of society, useful to others, or happy in ourselves. We must be disciplined and trained.

Education is a friend which no misfortune can estrange; a companion that never becomes wearisome; a light that never grows dim; a solace that never fails. It is the helper of the poor and unfortunate, the handmaid of genius, an introduction abroad, and an ornament in every walk of society. Without it, what is man—what can be but an untutored savage?

What sculpture is to a block of marble, education is to the mind. The philosopher, the saint, the hero, the wise, the good, the great, often lie hidden and concealed in some unnoticed individual, which a proper education might have disinterred and brought to light.

The True Motto.

Education begins with life. Before we are aware the foundatioms of the future structure are laid. Busy pursuits, the struggle for daily bread, and the toil that cannot be escaped, crowd out the opportunity to engage in the pursuit of knowledge, but if we take the correct view of this most important matter, we shall hold that education is never finished, that there is always something new to learn, that the highest summit has not been reached, and we shall still, in the spirit of Longfellow's "Excelsior," press upward with a noble resolve, and a determination that is daunted by no difficulty or failure.

Too apt are we to take a narrow, limited view of self-training. One boy is educated to be a bookkeeper; another, to be a draughtsman; another, to be a stenographer; another, to be an electrician; another, to be a lawyer or journalist. It is true that special training is needed for special pursuits, and no less true that the whole man needs to be educated, whatever may be the subsequent calling to be followed. All other training is like lopping off the branches on one side of the tree and causing them to grow only on the other side—very good branches, perhaps, but a very misshapen tree.

Hear what Daniel Webster said: Knowledge does not comprise all which is contained in the large term of education. The feelings are to be disciplined; the passions are to be restrained; true and worthy motives are to be inspired; a profound religious feeling is to be instilled, and pure morality inculcated under all circumstances. All this is comprised in education.

Said Washington—and our entire history since his day has proved the sagacity of his remark: Promote, as an object of primary importance, institutions for the general diffusion of knowledge. In proportion as the structure of a government gives force to public opinion, it is essential that public opinion should be enlightened. The Father of his Country was firm in the conviction that ignorance should have no place among a free people.

An Old Legend.

There is an old fable in classical Mythology which pictures Hydra as a serpent crawling in the slime of marshy Lerna—a monster with many heads, anyone of which, if cut off, was replaced by two others unless the wound was cauterized. The horrid creature was slain by Hercules; this was one of the giant's famous achievements. No less true is it that ignorance is a hydra with a thousand heads, ugly, dangerous, demonish, and the Hercules that alone can slay it is that knowledge which comes from enlightened education.

One of our martyred Presidents said: Next in importance to freedom and justice is popular education, without which neither freedom nor justice can be maintained. This means that more than banks, railroads, factories, commercial structures thirteen stories

high—more than all the sails of commerce and all the ploughs that turn up golden harvests from prairies, is that thorough training which fits the citizens of a free commonwealth for their duties and responsibilties.

William Penn, writing to his wife concerning their children, said: For their learning be liberal. Spare no cost; for by such parsimony all is lost that is saved; but let it be useful knowledge, such as is consistent with truth and godliness, not cherishing a vain conversation or idle mind; ingenuity, mixed with industry, is good for the body and the mind too.

Thus have the fathers and founders of our nation urged, insisted upon, demanded, all the advantages of liberal education, and, fortunately, these have been provided for all.

SELF CULTURE

NO one will deny that a large and very important part of mental and physical training is furnished by parents and teachers, who are the proper guardians and instructors of the young. Their influence is vast and far-reaching. If it were not so, if the schoolmaster and professor had no hand in forming mind and character, the doors of our schools and academies might as well be shut and nailed up.

As wrapt and hidden in the stone's embrace
  The future statue lies yet undefined;
  Till the nice chisel clears the form designed,
The trunk, the moving limbs, the speaking face
Develops: so instruction's hand must trace
  The intellectual form, which lies enshrined
  'Mid nature's rude materials; and the mind
Invest with due proportion, strength and grace.
God, to thy teaching, delegates the art
  To form the future man: the care be thine,
No shape unworthy from the marble start,
  Reptile or monster; but with just design
Copy the heavenly model, and impart,
  As best thou canst, similitude divine.

But what can others do for us compared with what we can do for ourselves? Books are our teachers and the printer's type rules the world.

Very justly it has been said by a recent writer: We all have two educations, one from others, and another, and the most valuable, which we give ourselves. It is this last which fixes our grade in society, and eventually our actual condition in this life, and the color of our fate hereafter. All the professors and teachers in the world would not make you a wise or good man without your own co-operation; and if such you are determined to be, the want of them will not prevail. We are to make the most of ourselves. It should be the duty of education to make men first and discoveries afterward.

The educated man is the one who wears the crown—the man who can learn from reading and observation and then apply what he knows. Every manufacturer, and every other employer knows the vast differ-

ence between an educated and uneducated workman. Two men come, soliciting work. One is boorish in appearance, ungrammatical in speech, dull in comprehension because his faculties have never been sharpened; he seems to be little less than a machine and with scarcely more comprehension. The other is bright, quick, speaks correctly, gives evidence of self-training and capacity. By his side the other presents a pitiable spectacle, and in the competition is distanced, as a trained sprinter outstrips a man on wooden legs. This is something occurring around us every day and within the commonest observation.

Great Value of Ready Information.

In all education a knowledge of men and things is indispensable. For this reason the cultured classes of Europe, and to some extent of our own country, have considered it essential for the boy or girl who has passed through the schoolroom and mastered the course of study, to seek information from other sources; to take a trip through the outside world and lay in a fund of such knowledge as can be obtained only by observing the daily doings of ordinary life and the people who are the actors in events of constant occurrence. The eye is the prime teacher. Open it and keep it open. Look, examine, ask questions, and do not be ashamed to ask.

Knock on the lids of books, packed with useful information, and say, "I am here to learn what you have to tell me. We are to become well acquainted; I am going to keep company with you; teach me, surprise me, store my mind with knowledge; unfold your secrets; let me into the sanctum; I have come to stay, and mean to traverse your charming pages until they are worn to a beaten path."

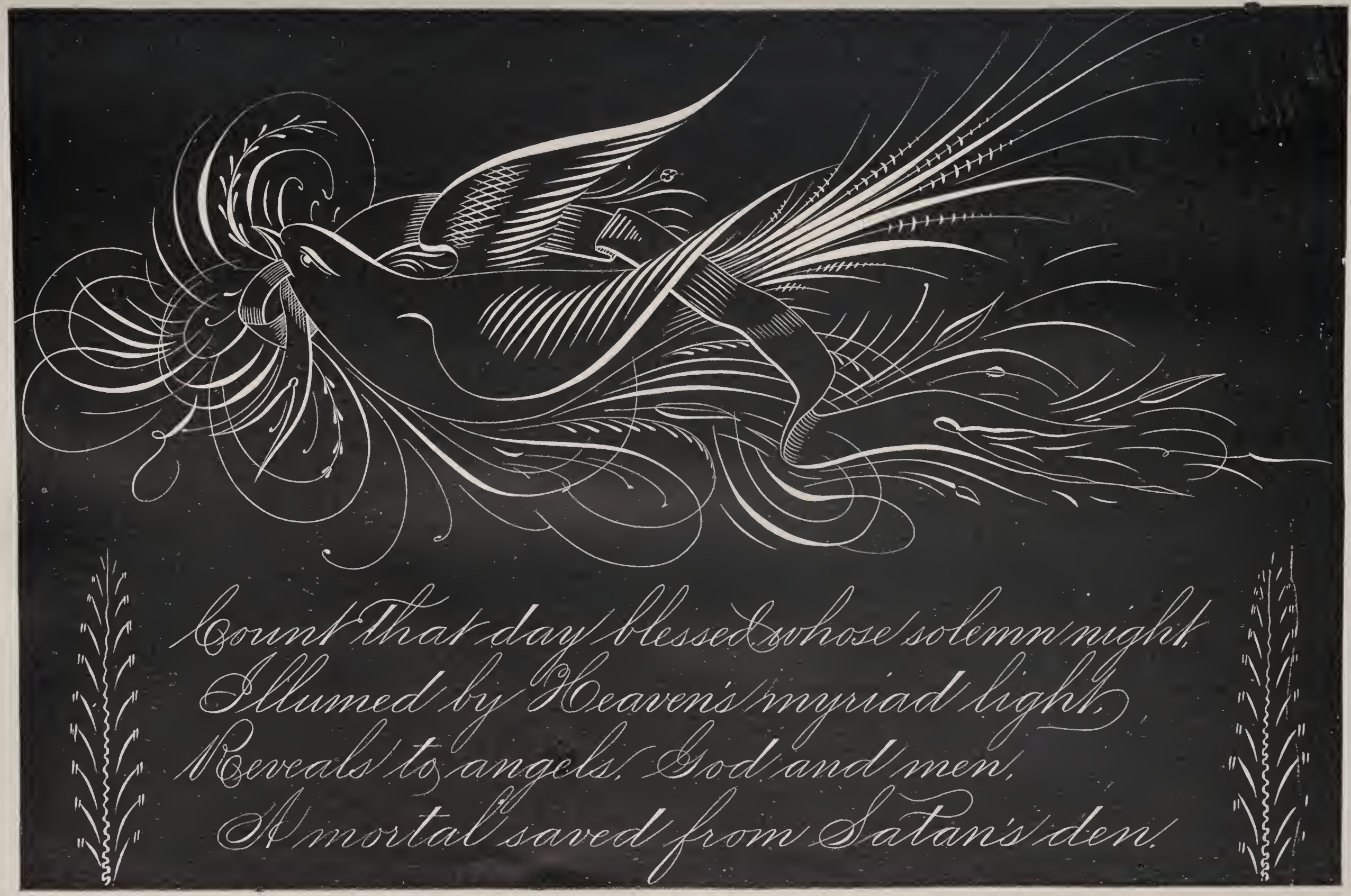
Say this to your books of thought, of knowledge, of all practical information. We say practical, for there is much that you do not need to know, and would not make you wiser if you did know. Common sense is the most uncommon, but it is the best. What will be useful for everyday life, teaching you how to think, to feel, to act, to succeed, to make the most of yourself, to step up higher and higher on the ladder of fame and fortune—this is what your book should teach.

Gold Must be Refined.

There is sure to come a time when those who have neglected self-culture in early life see the great mistake they have made; they regret it when perhaps it is too late. Although they are conscious of their own defects, their ignorance and sad lack of education, they have not time and opportunity to apply the remedy. You should, therefore, make the most of your advantages while you have them.

Very bright minds may remain in eclipse for want of cultivation. The diamond is not allowed to continue in its rough state; it must be cut and polished. Gold must be separated from the rude ore; it is of small account until this is done. Cicero says, cultivation to the mind is as necessary as food to the body. Soil uncultivated may produce the most luxuriant weeds, yet only weeds; it must be plowed, hoed, harrowed before it will produce good fruit.

Chesterfield said: I am very sure that any man of common understanding may, by culture, care, attention and labor, make himself whatever he pleases, except a great poet. This is only a part of the testimony that is given by the great minds of all ages, affirming that close application and rigorous discipline are essential to the highest attainments and the most brilliant success.



SPECIMEN OF BLACK-BOARD FLOURISHING

THE ENGLISH LANGUAGE

How to Write and Speak Correctly

ANY mode by which ideas are communicated is a correct definition of language. In a narrower sense it embraces human speech, and consists of sounds expressive of thought, made by the organs of the mouth and throat. It also includes written characters. Writing is the art of expressing ideas by visible signs or characters inscribed on some material.

It is either ideographic or phonetic. Ideographic writing may be either pictorial, representing objects by imitating their forms, or symbolic, by indicating their nature or properties. Phonetic writing may be syllabic or alphabetic; in the former, each character represents a syllable; in the latter, a single letter. The first mention of written letters is in the account given in the Book of Exodus of the Tables of the Law.

We are told that the Ten Commandments were *written* by the finger of God on tables or tablets of stone. This statement has led some writers to believe that letters were divinely invented upon this occasion.

There is no necessity, however, for taking this view of the case; for at the time of the "giving of the Law," a written language belonged to each of the nations on the southern shore of the Mediterranean. The Phœnician alphabet, upon which that of the Hebrews was modelled had been in existence for several centuries before this time, and as Phœnicia was then a dependency of Egypt, and engaged in active commerce with that country, Moses was doubtless acquainted with the Phœnician system.

How We Get the Alphabet.

The fact that the Hebrew alphabet was modelled upon the Phœnician seems almost a positive proof of this theory. The early history of the alphabet has to be reconstructed from inscriptions, as nothing in the shape of manuscripts is now in existence to tell us what were the forms of the letters. These are handed down in bronze and stone. The date of the invention of the Phœnician alphabet, which was the first purely phonetic system ever used, is now definitely settled.

It was during the supremacy of the Shepherd Kings over Egypt. These were princes of Canaanitish origin, who had conquered Lower Egypt, and were contemporary with Abraham, Isaac, Jacob and Joseph. The

discoveries of science give us reason to believe that it was the Shepherd Kings of Avaris, who borrowed from the Egyptian hieratic writing a certain number of alphabetical characters, employed them to represent the sounds of their own language, and thus produced the Phœnician alphabet of twenty-two letters, the origin of most of the other alphabets of the world. The Phœnicians not only invented the alphabet; they taught the use of it to all nations with whom they had commercial transactions.

With the progress of the world, the art of writing and the characters employed were greatly simplified, until the system in use at present was adopted by the civilized nations of the world.

Penmanship is the art of writing well. It is one of the most important accomplishments a person can possess. No matter what your position in life, the ability to write a good, clear, legible hand, is a priceless possession. To a young man starting out to make his way in life, it is so much genuine capital, which he can turn to advantage at almost every step. The great object should be to write a firm, clear hand, with uniformly made, well-shaped, and properly shaded letters. An abundance of flourishes or marks is a defect, except where ornamental writing or "flourishing" is intended.

The present system of forming and combining letters seems to be perfect. It enables the writer to put his thoughts on paper almost with the rapidity of speech, and it is not probable that it will ever be improved upon.

In this country two styles of penmanship are in use. One is known as the round hand, the other as the angular. A new system, known as the semi-angular, has been introduced, mainly through the efforts of the Spencers, and of Payson, Dunton and Scribner, and is winning its way to favor. The "copy books" prepared by these masters present the best and most progressive system of penmanship now accessible to the learner, and we cordially commend them to all.

Practice Necessary.

The only way in which a person can acquire the art of writing a good hand is by constant and conscientious practice. With some persons good penmanship is a gift, but all may acquire it by persistent practice. Select a good system of copies—the series referred to above cannot be improved upon—and try faithfully to form your hand upon the model selected. Do not be satisfied until you can do as well as the master you are seeking to imitate.

Writing Materials.

It is of the greatest importance that the writing materials used by you should be of the best quality.

The pen should be of steel or of gold. Many persons prefer the gold pen, because it more nearly approaches the quill in flexibility. It is also the most durable pen. A good gold pen, properly used, should last for years. For general use, and especially for ornamental writing, a good steel pen is by far the best. It enables you to make a finer and sharper line than can possibly be made with the gold or quill pen.

The paper should be of the best quality and texture, clearly ruled, and not too rough in surface. It is most common now to use copy books, regularly prepared and ruled. It is a good plan, after you have completed a copy book, to go over the same set of copies again. This may be done by taking half a dozen sheets of foolscap and cutting them in half. Place the half sheets within each other, and stitch them together, protecting the whole with a cover of stiff

paper. Then use the copies of the book you have just finished, writing on the new book you have thus made.

Blotters and Ink.

A slip of blotting-paper should be provided for every copy book. In writing rest the hand upon this, especially in warm weather. The perspiration thrown off by the hand is greasy in its nature, and soils the paper upon which the hand rests, and renders it unfit to receive the ink.

Never use poor ink. Black ink should always be used in learning to write, and in ordinary correspondence. Blue and red inks are designed for special purposes, and not for ordinary use. An ink that flows freely and is nearly black when first used is best. Do not use a shallow or light inkstand. The first will not allow you to fill your pen properly; the latter will be easily turned over. The inkstand should be heavy and flat, and of such a form that you can at once see the amount of ink in it, and thus know how deep to dip your pen. Dip your pen lightly into the ink, and see that it does not take up too much. The surplus ink should be thrown back into the inkstand, and not upon the floor. By stopping the mouth of the bottle when you have finished using it, you will prevent the ink from evaporating too fast, and also from becoming too thick.

A pen wiper should always be provided. This should be of some substance that will not leave a fibre in the slit of the pen. A linen rag or a piece of chamois or buckskin will answer.

Position of the Writer.

After you have learned to write, it is well to provide your desk with a lead pencil, a piece of India rubber, a ruler, and a bottle of mucilage and a brush.

In writing in a sitting position, a flat table is the best.

The position of the writer is a matter of the greatest importance, as it decides his comfort at the time, and exercises a powerful influence upon his general health.

The main object is to acquire an easy and graceful position, one in which the right arm has full play of the muscles used in writing.

The table should be sufficiently high to compel you to sit upright. Avoid stooping, as destructive of a good hand and of good health. Your position should be such as will enable you to fill your lungs without much



CORRECT POSITION OF A LADY IN WRITING.

effort. Sit with your right side next to the desk or table, and in such a position that the light will fall over your right shoulder upon the paper.

The right forearm must be placed on the desk so as to rest the muscle front of the elbow, and the hand placed on the book so as to rest the nails of the third and fourth fingers.

The forearm must be at right angles with the copy, the book being steadied by the fingers of the left hand placed on the paper at the left of the pen point. Hold the wrist naturally over the desk, and you will see that the inner side is raised a little higher than

At a Meeting of the

Washington Association

OF

Philadelphia.

Held at their Rooms August 1st 1896, the following resolution was offered and unanimously adopted.

RESOLVED,

That the Thanks of this Association are due and are

HEREBY TENDERED TO OUR RETIRING PRESIDENT.

Wm. Ross,

FOR THE

Able and efficient manner

in which he filled the office of President of this Association during the past twelve years

F. A. McCool
Secretary.

L.S.

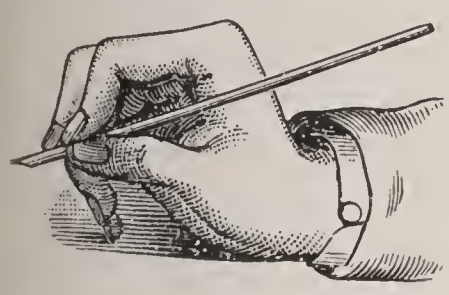
John Waters
President.

the outer. Keep the wrist free from the desk, and do not let it turn over to the right or the left, or bend down or up, or otherwise.

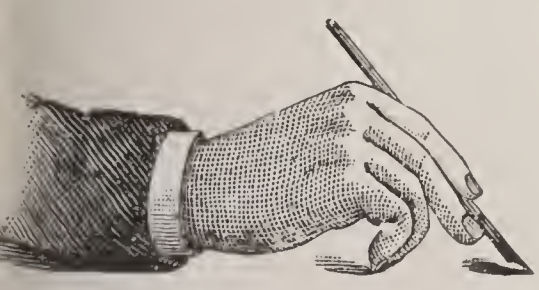
How to Hold the Pen.

Hold the pen lightly between the thumb and first two fingers, letting it cross the forefinger in front of the third joint. Rest the base of the holder at the nail of the middle finger. Place the forefinger over the holder. Bend the thumb and fingers outward, and the third and fourth fingers under to rest the hand on the nails. Let the nibs of the pen press the paper evenly.

The movements in writing are produced by the extension and retraction of the pen-fingers and the thumb; by the action of the forearm on the arm-rest as a centre of motion; the whole arm movement, which is the action of the whole arm from the shoulder as the centre of motion; and the union of all these movements. In ordinary writing, the first is sufficient. In ornamental writing, flourishing, etc., all the various movements are employed.



INCORRECT MODE OF HOLDING THE PEN.



PROPER MODE OF HOLDING THE PEN.



ORRECT POSITION OF THE HAND.

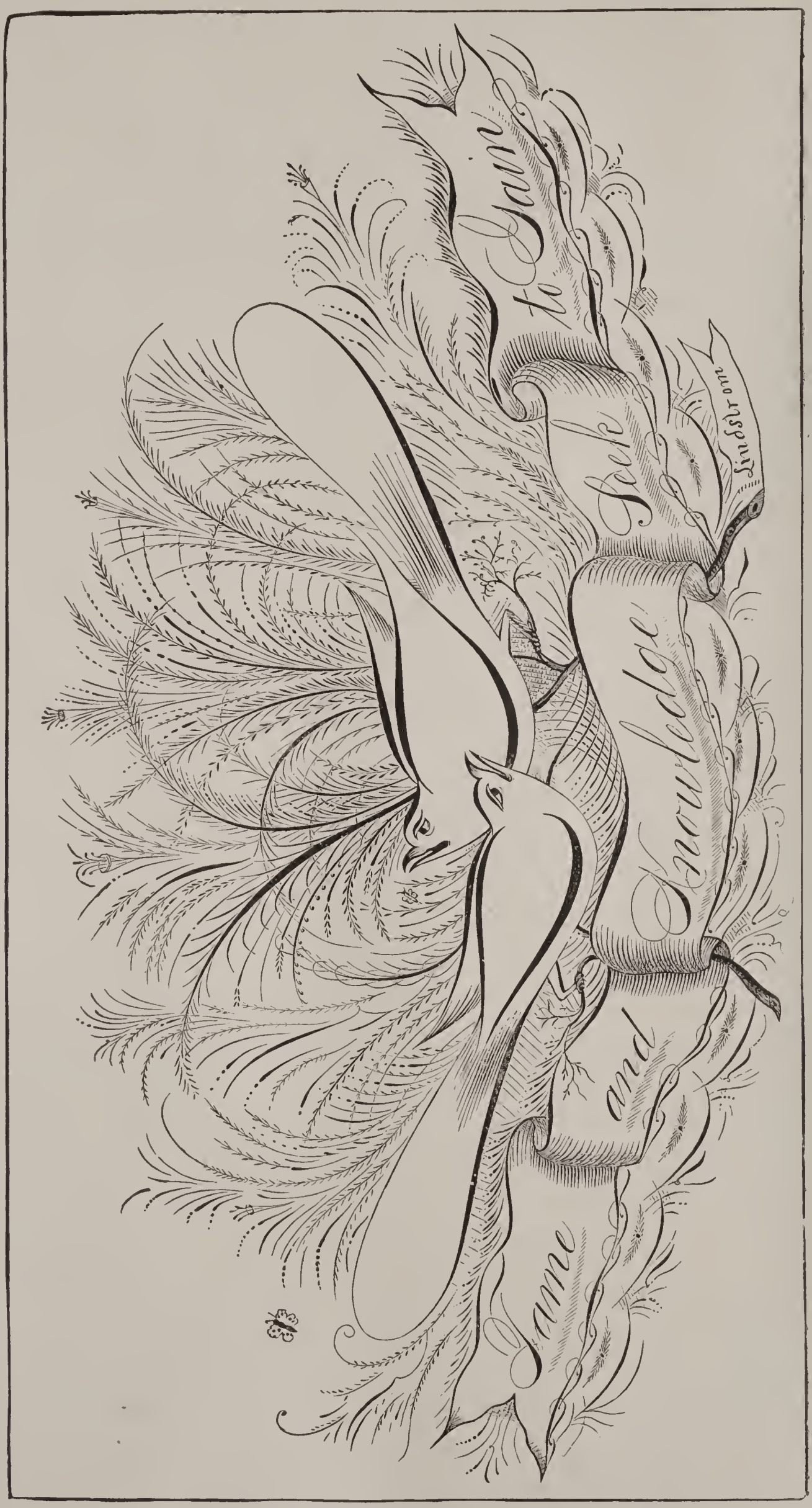
The fingers should be kept flexible, and their movements as well as those of the hand and wrist, should be free and unrestrained. Cramping or stiffening either the fingers or the wrist causes the handwriting to be cramped and awkward, and greatly fatigues the writer. The pen should be held as lightly as though the least pressure would crush it, and not grasped as though you thought it would fly away.

The Standing Position.

In standing at a desk to write, stand upright, and with the chest well thrown out. The desk should be high enough to compel you to do this. It should slightly incline from the outer edge upwards, and should project far enough to allow you to place your feet well under it. The principal weight of the body should rest upon the left foot, the right being thrown forward. Stand with your left side toward the desk, and rest your body on the left elbow, which should be laid upon the desk in such a manner as to enable you to steady your paper or book with the left hand. This position will enable you to write freely in the ordinary manner, or to use the whole forearm should you desire to do so. The pen-holder should point towards the right shoulder.

A great saving of fatigue is made by assuming and keeping a correct position while writing either sitting or standing. By conscientiously attending to this matter, you will soon acquire the habit of maintaining a correct position, and will reap the benefit in the ease with which you perform your task, and in improved health.

No one should be satisfied with a bad handwriting when it is in his power to improve it. Any one can procure a copy-book, and can spare an hour, or half an hour, a day for this effort at improvement. You should begin at the beginning, and practise faithfully until you have reached a satisfactory result. Remember that a good hand is not acquired in a week or a month; it takes long and diligent practice to produce



SPECIMEN OF PEN FLOURISHING.

this result. The end, however, is worth all the labor necessary to its accomplishment.

Plain Writing Always the Best.

The great aim should be to make the handwriting legible. An ornamental hand is very attractive, but it may be this and yet not easily read. This is to fail in the first requisite of good writing.

The advantages of writing well are numerous, and will readily suggest themselves. In the first place, it is always a pleasure to prepare a plainly and neatly-written letter or paper. The writer is then never afraid or ashamed for his friends to see his writing, and is never disgraced by a wretched scrawl in addressing a letter to a stranger.

A good hand is also an invaluable aid to a young man seeking employment. A merchant in employing clerks and salesmen will always give the preference to the best penman. A young man applying by letter for a situation can scarcely offer a better reference than the appearance of his letter. Should you wish to become a book-keeper or accountant, a good handwriting is a necessity.

How to Spell Correctly.

Whether a person is a good penman or not, it is necessary that he should know how to make use of his ability to write, or, in other words, how to transfer correctly his thoughts to paper.

The first requisite is to know how to spell correctly. This is even more important than writing a good hand. A badly-spelled letter is much more of a disgrace to the writer than one badly written. The habit of spelling correctly may be easily acquired, and once mastered is rarely lost. Our language is so rich in words that even the best of spellers may sometimes be unable to give the proper orthography of a word, but the knowledge of the general principles which govern the formation of English words will enable him to meet all the ordinary demands likely to be made upon him, These may be found in almost any spelling-book, or work upon the principles of composition. It is well, however, to give a few of the most important here. We may remark, in passing, that writing words out in full on paper, or on a slate, is an admirable means of impressing them upon the memory.

All words of one syllable ending in *l*, with a single vowel before it, have double *l* at the close: as *mill*, *sell*.

All words of one syllable ending in *l*, with a double vowel before it, have one *l* only at the close: as *mail*, *sail*.

Words of more than one syllable ending in *l*, when compounded, retain but one *l* each: as, *fulfil*, *skilful*.

Words of more than one syllable ending in *l*, have one *l* only at the close: as, *delightful*, *faithful*; except *befall*, *downfall*, *recall*, *unwell*, etc.

All derivations from words ending in *l* have one *l* only: as, *equality*, from *equal*; *fulness*, from *full*; except they end in *er* or *ly*: as, *mill*, *miller*; *full*, *fully*.

All participles in *ing* from verbs ending in *e* lose the *e* final: as, *have*, *having*; *amuse*, *amusing*; unless they come from verbs ending in double *e*, and then they retain both: as, *see*, *seeing*; *agree*, *agreeing*.

All adverbs in *ly* and nouns in *ment* retain the *e* final of the primitives: as, *brave*, *bravely*; *refine*, *refinement*; except *acknowledgment* and *judgment*.

All derivations from words ending in *er* retain the *e* before the *r*: as, *refer*, *reference*; except *hindrance*, from *hinder*; *remembrance*, from *remember*; *disastrous*, from *disaster*; *monstrous*, from *monster*; *wondrous*, from *wonder*; *cumbrous*, from *cumber*, etc.



A B C D E F G H I J
K L M N O P Q R S
T U V W X Y Z & L

1 2 3 4 5 6 7 8 9 0

a b c d e f g h i j k l m n o p
q r s t u v w x y z &

Mrs. Henry Holmes' compliments
to Mrs. R. J. Winchester requesting
the pleasure of her company to Tea
on Thursday evening next.

1515 No. 8th St.

Phila. Feb. 12th.

SPECIMEN OF BLACK-BOARD FLOURISHING



Compound words, if both end not in *l*, retain their primitive parts entire: as, *mill-stone*, *changeable*, *raceless*; except *always*, *also*, *deplorable*, *although*, *almost*, *admirable*, etc.

All one-syllables ending in a consonant, with a single vowel before it, double that consonant in derivatives: as, *sin*, *sinner*; *ship*, *shipping*; *big*, *bigger*; *glad*, *gladder*, etc.

One-syllables ending in a consonant, with a double vowel before it, do not double the consonant in derivatives: as, *sleep*, *sleeper*; *troop*, *trooper*.

All words of more than one syllable ending in a single consonant, preceded by a single vowel, and accented on the last syllable, double that consonant in derivatives: as, *commit*, *committee*; *compel*, *compelled*; *appal*, *appalling*; *distil*, *distiller*.

Nouns of one syllable ending in *y*, preceded by a consonant, change *y* into *ies* in the plural; and verbs ending in *y*, preceded by a consonant, change *y* into *ies* in the third person singular of the present tense, and into *ied* in the past tense and past participle: as, *fly*, *flies*; *I apply*, *he applies*; *we reply*, *we replied*, or *have replied*. If the *y* be preceded by a vowel, this rule is not applicable: as, *key*, *keys*; *I play*, *he plays*; we have *enjoyed* ourselves.

Compound words whose primitives end in *y*, change *y* into *i*: as, *beauty*, *beautiful*; *lovely*, *loveliness*.

How to Use Capital Letters.

It is an excellent plan to keep a small dictionary at hand, in order that you may refer at once to the word if you are in doubt as to its orthography. The standard recognized in the United States is either Worcester or Webster. Johnson's is good, or Walker's, and for students' use, Stormonth's is available and handy.

There is no surer mark of an educated person than the proper use of capital letters. To omit them when they should be used is a serious blunder, and to make too profuse a display of them is to disfigure your writing, and proclaim yourself ignorant of one of the first principles of correct writing.

The rules governing the use of these letters are few, simple, and easily remembered. They may be stated as follows:

The first word of every book, chapter, letter, note, or any other piece of writing should begin with a capital letter.

The names of the months and the days of the week should always begin with a capital letter.

The first word after a period should begin with a capital letter.

The first word after every interrogation, or exclamation, should begin with a capital letter; unless a number of interrogative or exclamatory sentences occur together, and are not totally independent.

The various names or appellations of the Deity should begin with a capital letter: as, God, Jehovah, the Almighty, the Supreme Being, the Lord, Providence, the Messiah, the Holy Spirit, etc.

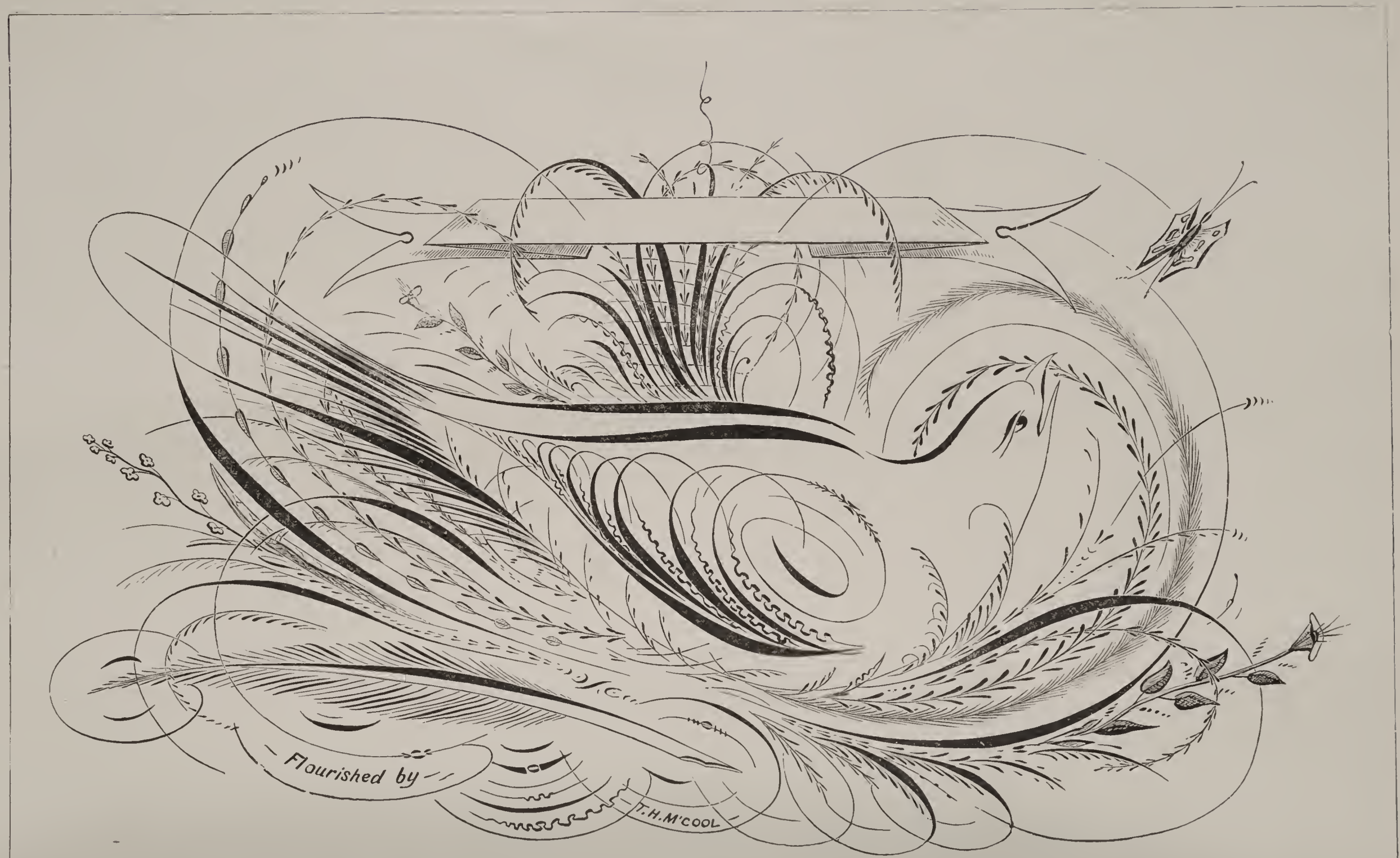
All proper names, such as the names of persons, places, streets, mountains, lakes, rivers, ships, etc., and adjectives derived from them, should begin with a capital letter.

The first word of a quotation after a colon, or when it is in direct form, should begin with a capital letter.

The first word of an example, every substantive and principal word in the titles of books, and the first word of every line in poetry, should begin with a capital letter.

The pronoun I, and the interjection O, are always written in capitals.

Any words, when remarkably emphatic, or when they are the principal subject of the



SPECIMEN OF ORNAMENTAL PEN FLOURISHING.

composition, may begin with capitals. The observance of these rules is important.

How to Punctuate Correctly.

A knowledge of punctuation is very important. A document not punctuated, or not punctuated properly, may present a neat appearance if written in a good hand and correctly spelled, but its value may often be entirely destroyed by incorrect punctuation. A notable instance of this occurred in England, and is thus noticed in the *London Times:*

"The contract lately made for lighting the town of Liverpool, during the ensuing year, has been thrown void by the misplacing of a comma in the advertisement, which ran thus: 'The lamps at present are about 4050 in number, and have in general two spouts each, composed of not less than twenty threads of cotton.' The contractor would have proceeded to furnish each lamp with the said twenty threads; but, this being but half the usual quantity, the commissioner discovered that the difference arose from the comma following, instead of preceding the word *each*. The parties agreed to annul the contract, and a new one was ordered."

Punctuation Marks.

A Mr. Sharpe once engraved a portrait of a certain Richard Brothers, and gave the following certificate to that effect. The document was designed as a simple statement of fact. The misplacement of a comma, however converted it into a piece of gross profanity. It read as follows: "Believing Richard Brothers to be a prophet sent, by God I have engraved his portrait." Had the comma been placed after the name of the Deity, the effect would have been very different.

Punctuation is the art of dividing a written composition into sentences; and is principally used to mark the grammatical divisions of a sentence. The marks employed in punctuation are sometimes used to note the different pauses and tones of voice, which the sense and accurate pronounciation require.

The characters or marks used in punctuation are as follows:

The Comma,	,	The Ellipsis,	* * * *
The Semicolon,	;	The Hyphen,	-
The Colon,	:	The Breve,	⏑
The Period,	.	The Apostrophe	’
The Quotation Marks,	“ ”		
The Diæresis,	..	The Brace,	}
The Crotchets,	( )	The Acute Accent,	´
The Brackets,	[ ]	The Grave Accent,	`
The Exclamation,	!	The Circumflex Accent,	^
The Interrogation,	?	The Caret,	∧
The Dash,	——	The Cedilla,	ç

In addition to these the following marks of reference are used:

The Asterisk,	*	The Section,	§
The Obelisk,	†	The Parallels,	‖
The Index,	☞	The Paragraph,	¶
The Double Obelisk,	‡		

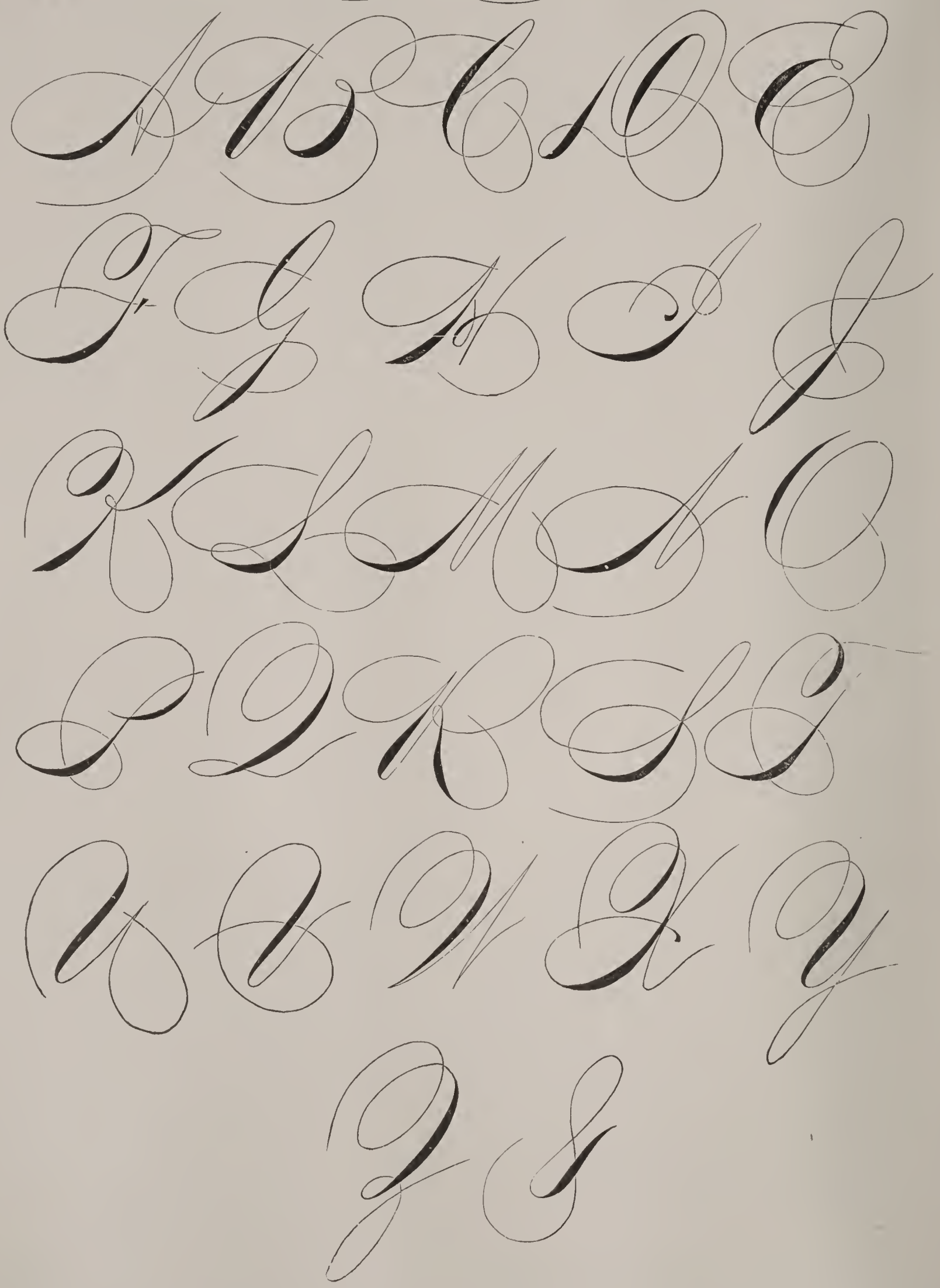
Rules of Punctuation.

When two or more words are connected without the connecting word being expressed, the comma supplies the place of that word; as "Alfred was a brave, pious, patriotic prince."

Those parts of a sentence which contain the relative pronoun, the case absolute, the nominative case independent, any parenthetical clause, and simple members of sentences, connected by words expressing a comparison, must be separated by commas; as, "The elephant, which you saw in the menagerie, took the child up with his trunk into his cage." "Shame being lost, all virtue is lost." "Peace, O Virtue, peace is all thine own." "Better is a dinner of herbs with love, than a stalled ox and hatred therewith."

The following words and phrases, and others similar to them, are generally separated

Whole-Arm Capitals.



by commas from the rest of the sentence; namely, Nay, so, however, hence, besides, perhaps, finally, in short, at least, moreover, again, first, secondly, thirdly, lastly, once more, on the contrary, etc.

The words of another writer, not formally introduced as a quotation, and words and clauses expressing contrast or opposition, though closely connected in construction, are separated by a comma; as, "I pity the man, who can travel from Dan to Beersheba and cry, 'Tis all barren."

"Though deep, yet clear; though gentle, yet not dull;
Strong, without rage; without o'erflowing, full."

When the absence of a word is indicated in reading or speaking by a pause, its place may be suppled by a comma; as, "From law arises security; from security, inquiry; from inquiry, knowledge."

Nouns in apposition, accompanied by explanatory words or phrases, are separated by commas; but if such nouns are single, or only form a proper name, they are not divided; as, "Paul the Apostle of the Gentiles was eminent for his zeal and knowledge."

Semicolons, Colons and Periods.

When a sentence consists of several members, each constituting a distinct proposition, and having a dependence upon each other, or upon some common clause, they are separated by semicolons; as, "Wisdom has builded her house; she hath hewn out her seven pillars; she hath killed her beasts; she hath mingled her wine; she hath also furnished her table."

The colon is used to divide a sentence into two or more parts, which, although the sense be complete in each, are not wholly independent; as, "Nature felt her inability to extricate herself from the consequences of guilt: the Gospel reveals the plan of Divine interposition and aid." Here the clauses are complete in sense, yet form one sentence.

The colon is used when an example, a quotation, or a speech is introduced; as, "The Scriptures give us an amiable representation of the Deity in these words: God is love."

The period is used at the end of a complete and independent sentence. It is also placed after initial letters when used alone; and, likewise, after all abbreviations; as, "One clear and direct path is pointed out to man." "Fear God." "Have charity towards all men." "G. W.," for "George Washington." "Geo.," for "George." "Benj.," for "Benjamin." "O. S.," for "Old Style." "F. R. S.," for "Fellow of the Royal Society."

In a general view, the period separates the paragraph into sentences; the semicolon divides a compound sentence into simple ones; and the comma collects into clauses the scattered circumstances of manner, time, place, relation, etc., belonging to every verb and to every noun.

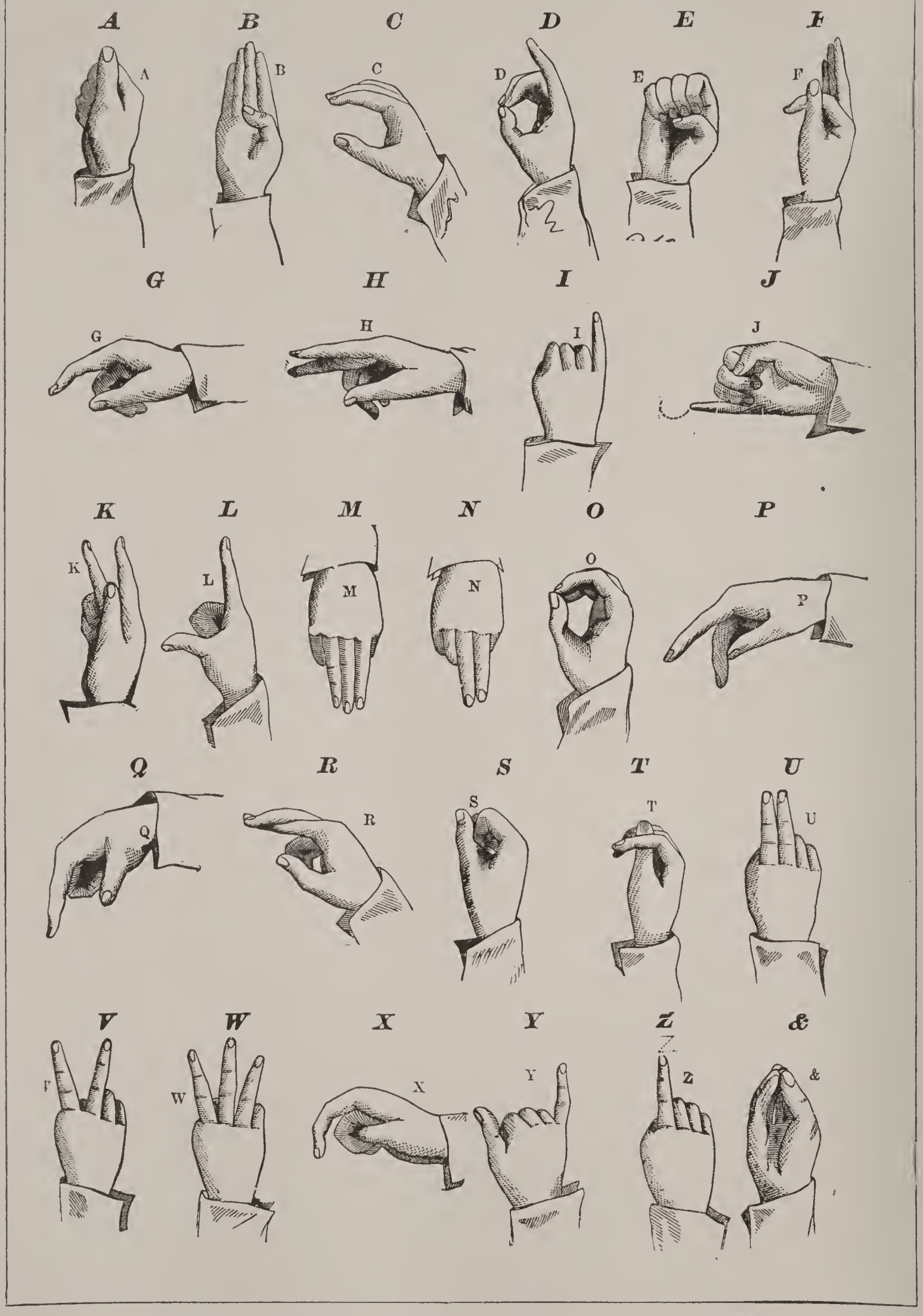
Interrogation and Exclamation Marks.

The note of interrogation, or the question, as it is sometimes called, is placed after every sentence which contains a question; as, "Who is this?" "What have you in your hand?" "The Cyprians said to me, Why do you weep?"

The exclamation point is used to express any sudden or violent emotion; such as surprise, joy, grief, love, hatred, anger, pity, anxiety, ardent wish, etc. It is also used to mark an exalted idea of the Deity; and is generally placed after the nominative case independent; and after the noun or pronoun which follows an interjection; as, "How mischievous are the effects of war!" "O blissful days! Ah me! how soon we pass!"

The exclamation point is also used after

ONE-HAND ALPHABET.



SIGNS USED FOR LETTERS BY THE DEAF AND DUMB.

sentences containing a question when no answer is expected; as, "What is more amiable than virtue!"

Several exclamation points are sometimes used together, either in a parenthesis or by themselves, for the purpose of expressing ridicule or a great degree of surprise.

The Parenthesis, Bracket, Hyphen, Etc.

A parenthesis is a sentence, or a part of a sentence, inserted within another sentence, but which may be omitted without injuring the sense or construction, and is enclosed between two closed lines like these: ( ).

The curved lines between which a parenthesis is enclosed are called crotchets.

Sometimes a sentence is enclosed between marks like these, [ ], which are called brackets.

The following difference is to be noticed in the use of crotchets and brackets: Crotchets are used to enclose a sentence, or part of a sentence, which is inserted between the parts of another sentence: Brackets are generally used to separate two subjects or to enclose an explanatory note or observation standing by itself. When a parenthesis occurs within another parenthesis, brackets enclose the former, and crotchets the latter; as in the following sentence from Stern: "I know the banker I deal with, or the physician I usually call in [there is no need, cried Dr. Slop (waking), to call in any physician in this case], to be neither of them man of much religion."

It may be here remarked that a parenthesis is frequently placed between commas, instead of crotchets, etc.; but the best writers avoid the use of parenthesis as much as possible.

The hyphen is a small mark placed between the parts of a compound word; as, sea-water, semi-circle.

The hyphen is also used to denote the long sound of a vowel; as, Epicurē-an, decō-rum.

The hyphen must always be put at the end of the line when part of the word is in one line and part in another; but in this case, the letters of a syllable must never be separated; as, extraor-
dinary, not ext-
raordinary.

The dash is a straight mark longer than a hyphen; thus, —

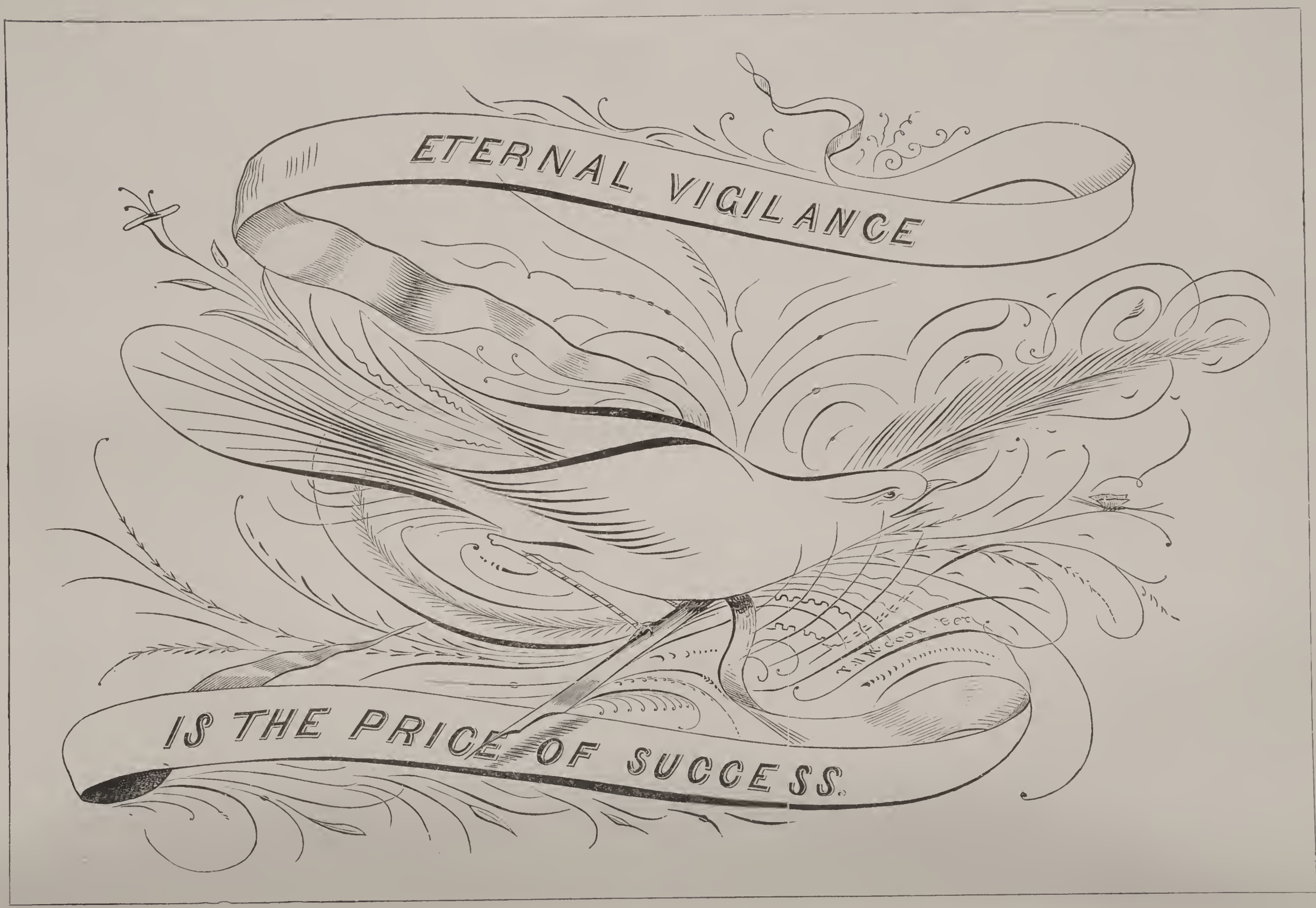
The proper use of the dash is to express a sudden stop or change of the subject; but by modern writers, it is employed as a substitute for almost all of the other marks: being used sometimes for a comma, semicolon, colon or period; sometimes for a question or an exclamation, and sometimes for crotchets and brackets to enclose a parenthesis.

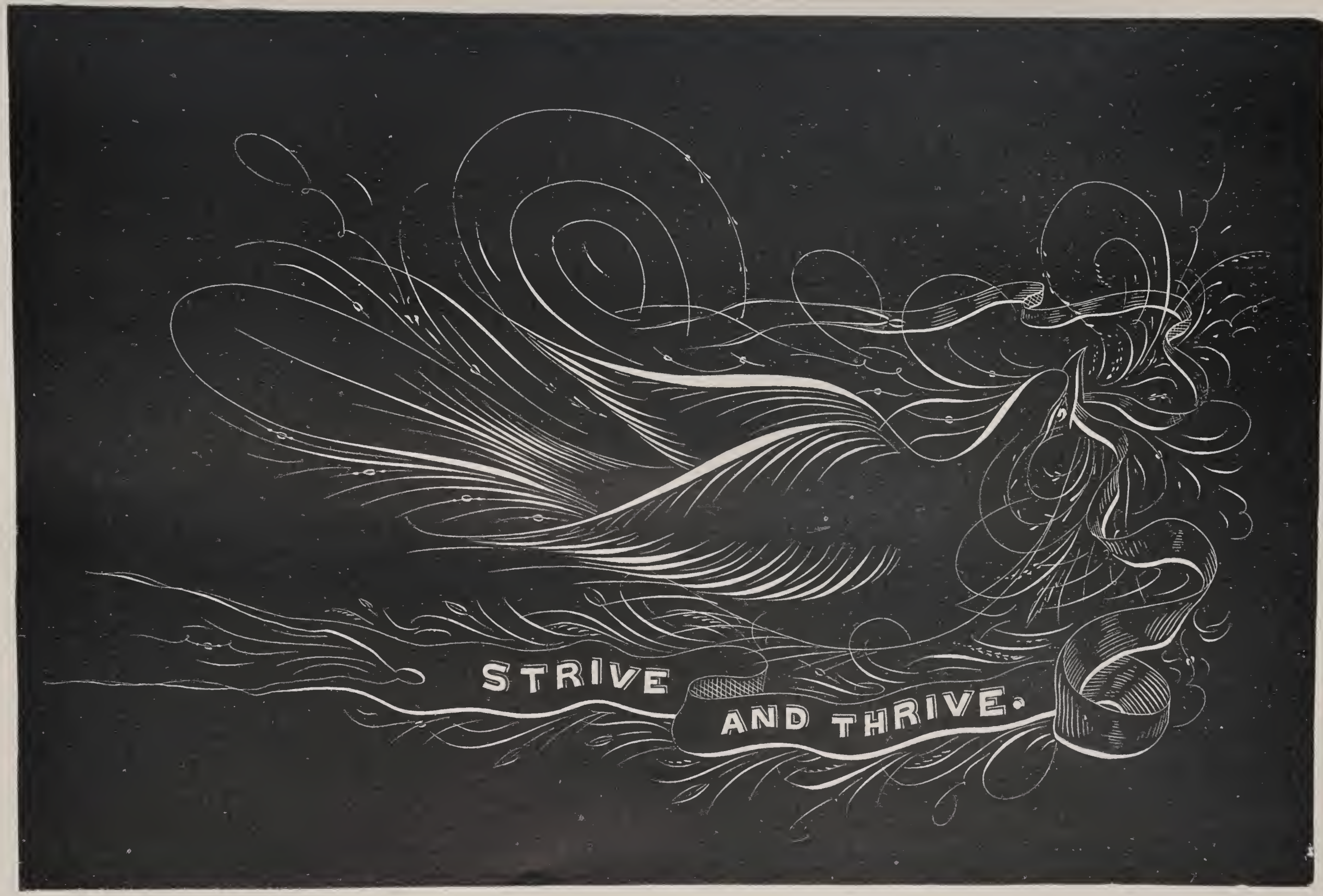
An ellipsis or omission of words, syllables or letters, is indicated by various marks: sometimes by a dash; as, the k——g, for the king; sometimes by asterisks or stars, like these, * * * *; sometimes by hyphens, thus, - - - -; sometimes by small dots or periods, like these, ...

The breve (thus) is placed over a vowel to indicate its short sound; St. Hĕlena.

The apostrophe is the comma placed above the line. It is used as the sign of the possessive case, and sometimes indicates the omission of a letter or several letters; as, "John's;" "'tis" for "it is;" "tho'" for 'though;" "lov'd" for "loved;" "I'll" for "I will."

The quotation marks, or inverted commas, as they are sometimes called, consist of four commas, two inverted, or upside down, at the beginning of a word, phrase or sentence which is quoted or transcribed from some author in his own words; and two others, in


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their direct position, placed at the conclusion; as, an excellent poet says:

"The proper study of mankind is man."

Sometimes the quotation is marked by single instead of double commas.

The diæresis consists of two periods placed over the latter of two vowels to show that they are to be pronounced in separate syllables; as, Laocoön, Zoönomia, coöperate.

The brace is employed to unite several lines of poetry, or to connect a number of words with one common term; and it is also used to prevent a repetition in writing or printing; thus,

"Waller was smooth; but Dryden taught him to join
The varying verse, the full-resounding line,
The long majestic march and energy divine."

C-e-o-u-s
C-i-o-u-s
S-c-i-o-u-s
T-i-o-u-s
} are pronounced like shus.

The cedilla, or cerilla, is a curve line placed under the letter *c*, to show that it has the sound of *s*. It is used principally in words derived from the French language.

Thus garçon, in which word the ç is to be pronounced like *s*.

The accents are marks used to signify the proper pronounciation of words.

The accents are three in number:

The grave accent, thus, `
The acute accent, thus, ´
The circumflex accent, thus, ^

The grave accent is represented by a mark placed over a letter, or syllable, to show that it must be pronounced with the falling inflection of the voice; as, Reuthàmir.

The acute accent is represented by a similar mark, pointing in the opposite direction, to show that the letter or syllable must be pronounced with the rising inflection of the voice; thus, Epicuréan, Européan.

The meaning of a sentence often depends on the kind of accent which is used; thus the following sentence, if the acute accent be used on the word *alone*, becomes a question:

"Pleased thou shalt hear, and thou alóne shalt hear?"

But if the grave accent be placed on the word *alone*, it becomes a simple declaration; as,

"Pleased thou shalt hear, and thou alone shalt hear."

The circumflex accent is the union of the grave and acute accents, and indicates that the syllable on which it is placed should have both the rising and falling inflection of the voice.

The caret is a mark resembling an inverted V, placed under the line. It is never used in printed books, but, in manuscripts, shows that something has been accidentally omitted; as,

recited
"George has his lesson."
∧

When many notes occur on a page, and the reference marks given above are exhausted, it is customary to double them. Some writers prefer to use the numerals, 1, 2, 3, 4, etc., as simpler. This is a matter of taste with the writer.

Sections and Paragraphs.

The section § and the paragraph ¶ are used to mark the parts of a composition that should be separated. Where you wish the compositor to separate a paragraph into two or more paragraphs, it is not necessary to rewrite the page. Place the ¶ where you wish each new paragraph to begin, and the compositor will understand your wishes.

A paragraph denotes the beginning of a new subject, or a sentence not connected with the foregoing.

A section is used for subdividing a chapter into smaller parts.

It is proper here to add, that every composition should be divided into paragraphs,



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when the sense will allow the separation. Different subjects, unless they are very short, or very numerous in a small compass, should be separated into paragraphs.

Underscoring.

Many mistakes arise from improperly underscoring the words of a manuscript or letter. It is well to refrain from underscoring a word wherever you can do so with propriety, just as you would avoid unduly emphasizing your words in speaking. A single line drawn under a word indicates that it must be set by the compositor in italics; as, "I dearly love her." Two lines indicate small capitals; as, "I HONOR him." Three lines indicate large capitals; as, "Help, help, I cry."

GENERAL PRINCIPLES OF GRAMMAR.

Although the details of Grammar and grammatical rule are not embraced in the plan of this work, we may with propriety present some observations with regard to those principles which are most frequently forgotten or disregarded by careless writers. These are here presented in the form of directions.

DIRECTION 1st. In determining the number of a verb, regard must be had to the idea which is embraced in the subject or nominative. Whenever the idea of *plurality* is conveyed, whether it be expressed by one word or by one hundred, and however connected, and in whatever number the subject may be, whether singular or plural, all verbs relating to it must be made to agree, not with the number of the *word* or *words*, but with the number of the *idea* conveyed by the words.

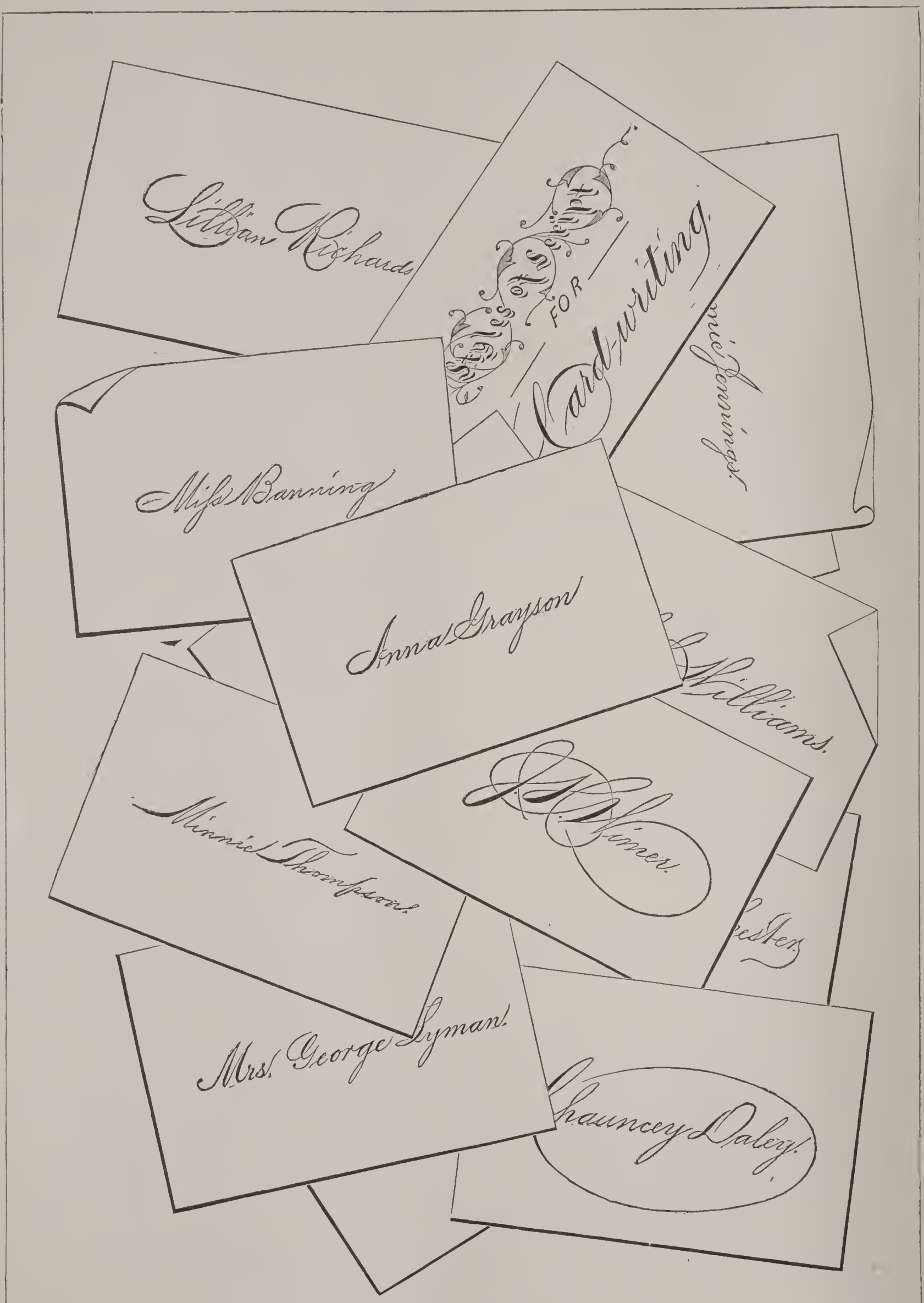
DIRECTION 2d. In the use of pronouns the same remark applies: namely, that the number of the pronoun must coincide with the *idea* contained in the word, or words, to which the pronoun relates. If it imply unity, the pronoun must be singular; if it convey plurality, the pronoun must be plural. These directions will be better understood by an example.

Thus, in the sentence, "Each of them, in *their* turn, *receive* the benefits to which *they are* entitled," the verbs and pronouns are in the wrong number. The word *each*, although it includes *all*, implies but *one at a time*. The *idea*, therefore, is the idea of *unity*, and the verb and pronoun should be singular; thus, "Each of them in *his* turn *receives* the benefit to which *he* is entitled."

The same remark may be made with regard to the following sentences: "Every person, whatever be *their* (his) station, is bound by the duties of morality." "The wheel killed another man, who is the sixth that *have* (has) lost *their* (his) *lives* (life) by these means." "I do not think that any one should incur censure for being tender of *their* (his) reputation."

DIRECTION 3d. In the use of verbs and words which express time, care must be taken that the proper tense be employed to express the time that is intended. Perhaps there is no rule more frequently violated than this, even by good writers; but young writers are very prone to the error; thus the author of the Waverley Novels has the following sentence:

"'Description,' he said, '*was* (is) to the author of a romance exactly what drawing and tinting *were* (are) to a painter; words *were* (are) his colors, and, if properly employed, they *could* (can) not fail to place the scene which he *wished* (wishes) to conjure up as effectually before the mind's eye as the tablet or canvas presents it to the bodily organ. The same rules,' he continued, '*applied* (apply) to both, and an exuberance of



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dialogue in the former case *was* (is) a verbose and laborious mode of composition, which *went* (goes) to confound the proper art of the drama, a widely different species of composition, of which dialogue *was* (is) the very essence; because all, excepting the language to be made use of, *was* (is) presented to the eye by the dresses, and persons, and actions of the performers upon the stage.'"

The author was misled throughout in the tenses of the verbs in this extract by the tense of the verb *said*, with which he introduces it.

DIRECTION 4th. Whenever several verbs belonging to one common subject occur in a sentence, the subject or nominative must be repeated whenever there is a change in the mood, tense, or form of the verb.

DIRECTION 5th. In the use of the comparative and superlative degrees of the adjective it is to be remarked, that when two things or persons only are compared, the comparative degree, and not the superlative, should be used. Thus, in the sentence, "Catharine and Mary are both well attired; but, in their appearance, Catharine is the neatest, Mary the most showy," the superlative degree of the adjective is improperly applied. As there are but two persons spoken of, the adjectives should be in the comparative degree: namely, *neater* and *more showy*.

DIRECTION 6th. Neuter and intransitive verbs should never be used in the passive form. Such expressions as *was gone*, *is grown*, *is fallen*, *is come*, *may be relied on*, etc., although used by some good writers, are objectionable.

DIRECTION 7th. In the use of irregular verbs, a proper distinction should be made in the use of the imperfect tense and the perfect participle.

He *done* (did) it at my request; he *run* (ran) a great risk; he has *mistook* (mistaken) his true interest; the cloth was *wove* (woven) of the finest wool; he writes as the best authors would have *wrote* (written) had they *writ* (written) upon the subject; the bell has been *rang* (rung); I have *spoke* (spoken) to him upon the subject. These sentences are instances where the proper distinction between the preterite and participle has not been preserved.

DIRECTION 8th. The negative adverb must be followed by the negative conjunction; as, "The work is *not* capable of pleasing the understanding, *nor* (not *or*) the imagination." The sentence would be improved by using the conjunction in pairs, substituting *neither* for *not*.

In the following sentences, the conjunction *but* is improperly used: "I cannot deny *but* that I was in fault." "It cannot be doubted *but* that this is a state of positive gratification."

DIRECTION 9th. There must be no ellipsis of any word, when such ellipsis would occasion obscurity. Thus, when we speak of "the laws of God and man," it is uncertain whether one or two codes of laws are meant; but, in the expression, "the laws of God and the laws of man," the obscurity vanishes. A nice distinction in sense is made by the use or omission of the articles. "A white and red house" means *but one* house; but "A white and a red house" means *two* houses. In the expression, "She has *a* little modesty," the meaning is positive; but by omitting the article, "She has little modesty," the meaning becomes negative. The position of the article, also, frequently makes a great difference in the sense, as will be seen in the following examples: "As delicate a little thing;" "As a delicate little thing."

DIRECTION 10th. The adverb should always be placed as near as possible to the

word which it is designed to qualify. Its proper position is generally before adjectives, after verbs and frequently between the auxiliary and the verb. The following sentence exhibits an instance of the improper location of the adverb: "It had *almost* been his daily custom, at a certain hour, to visit Admiral Priestman." The adverb *almost* should have been placed before *daily*.

DIRECTION 11th. In the use of passive and neuter verbs, care must be taken that the proper nominative is applied. That which is the object of the active verb must in all cases be the subject or nominative of the passive verb. Thus, we say, with the active verb, "They offered him mercy" (*i. e.*, to him): and, with the passive verb, "Mercy was offered to him;" not "He was offered mercy," because "mercy," not "he," is the thing which was offered. It is better to alter the expression by substituting a synonym with a proper nominative or subject, than to introduce such confusion of language, as must necessarily result from a change in the positive, fixed and true significations of words, or from a useless violation of grammatical propriety.

In accordance with this direction (see, also, Direction 6th),

Instead of	*It would be better to say,*
He was prevailed on,	He was persuaded.
He was spoken to,	He was addressed.
She was listened to,	She was heard.
They were looked at,	They were seen, *or* viewed.
It is approved of,	It is liked, *or* commended.
He was spoken of,	He was named, *or* mentioned.
It is contended for,	It is maintained, *or* contested.
It was thought of,	It was remembered, *or* conceived.
He was called on by his friend,	He was visited by his friend.
These examples are commented upon with much humor,	These examples are ridiculed with much humor.
He was referred to as an oracle,	He was consulted as an oracle.

DIRECTION 12th. All the parts of a sentence should be constructed in such a manner that there shall appear to be no want of agreement or connection among them. Thus, the following sentence, "He was more beloved, but not so much admired as Cynthio," is inaccurate, because when it is analyzed, it will be, "He was more beloved *as* Cynthio," etc. The adverb *more* requires the conjunction *than* after it; and the sentence should be, "He was more beloved *than* Cynthio, but not so much admired."

Again, in the sentence, "If a man *have* a hundred sheep, and one of them *goes* astray," etc., the subjunctive word, *have*, is used after the conjunction *if*, in the first part of the sentence, and the indicative *goes*, in the second. Both of these verbs should be in the indicative, or both in the subjunctive mood.

No definite rule can be given which will enable the learner to make the parts of a sentence agree in themselves, and with one another. They should be diligently compared, and a similarity of construction be carefully maintained; while the learner will recollect that no sentence can be considered grammatically correct, which cannot be analyzed or parsed by the authorized rules of Syntax.

Construction of Sentences.

In the construction of sentences care should be taken to choose the simplest words, and those which most directly and strikingly convey the meaning you wish to express. Three things are necessary in a correct sentence—*purity*, *propriety* and *precision*.

Purity consists in using such words and expressions as belong to the idiom of the English language, in place of words or phrases drawn from foreign or dead languages, or that are either ungrammatical, obsolete, newly coined or not sanctioned by usage. The use of words that are not English is a violation of this rule, and is termed a *barbarism*. The rule is also violated by the use of words or phrases not constructed

in the English idiom. This fault is termed a *solecism*, By using words or phrases to convey a meaning different from that assigned to them by custom, you also violate the rule. This is termed an *impropriety*.

Propriety in writing consists in the use of words sanctioned by the usage of the best writers to convey your meaning, and in the avoidance of low, vulgar or less elegant and significant words. In order to remain faithful to this principle, a writer should bear in mind the following rules:

Avoid low or slang expressions.

Supply words that are wanting.

Do not use the same word in different senses. Wherever it is possible, avoid the use of technical terms; by which is meant terms or expressions used in some art, occupation or profession.

Do not use ambiguous or equivocal words.

Avoid unintelligible and inconsistent words or phrases.

When words or phrases are not adapted to the ideas you intend to communicate, avoid the use of them.

Precision means to make your writing a clear and concise statement of your thoughts, so clear that no one reading it can fail to comprehend your exact meaning. You may use words that convey a meaning different from that you intend; or they may not entirely convey your meaning; or they may convey more than you intend. Precision is designed to express neither more nor less than your exact thought.

Do not make your sentences very long; neither make them very short. When a sentence is too long, the attention of the reader is drawn off from the first part while considering the last, and he finds it difficult to perceive the connection between them. Short sentences generally weaken the thought. Sentences of moderate length, clearly and strikingly expressed, are the best.

The Best Style.

"Style," says Dr. Blair, "is the peculiar manner in which a writer expresses his thoughts by words."

Various terms are applied to style to express its character, as a harsh style, a dry style, a tumid or bombastic style, a loose style, a terse style, a laconic or a verbose style, a flowing style, a lofty style, an elegant style, an epistolary style, a formal style, a familiar style, etc.

The divisions of style, as given by Dr. Blair, are as follows: The diffuse and the concise, the nervous and the feeble, the dry, the plain, the neat, the elegant, the florid, the simple, the affected, and the vehement. These terms are altogether arbitrary, and are not uniformly adopted in every treatise on rhetoric. Some writers use the terms barren and luxuriant, forcible and vehement, elevated and dignified, idiomatic, easy and animated, etc., in connection with the terms, or some of the terms employed by Dr. Blair.

The character of the style, and the term by which it is designated, depends partly on the clearness, the fulness, and the force with which the idea is expressed; partly on the degree of ornament or of figurative language employed; while the character of the thoughts or ideas themselves is expressed by the names of simple or natural, affected and vehement.

A concise writer compresses his ideas into the fewest words, and these the most expressive.

A diffuse writer unfolds his idea fully, by placing it in a variety of lights.

A nervous writer gives us a strong idea of his meaning—his words are always expressive—every phrase and every figure renders

the picture which he would set before us more striking and complete.

A feeble writer has an indistinct view of his subject; unmeaning words and loose epithets escape him; his expressions are vague and general, his arrangements indistinct, and our conception of his meaning will be faint and confused.

A dry writer uses no ornament of any kind, and, content with being understood, aims not to please the fancy or the ear.

A plain writer employs very little ornament; he observes perspicuity, propriety, purity, and precision in his language, but attempts none of the graces of composition. A dry writer is incapable of ornament—a plain writer goes not in pursuit of it.

A neat writer is careful in the choice of his words, and the graceful collocation of them. His sentences are free from the encumbrances of superfluous words, and his figures are short and accurate, rather than bold and glowing.

An elegant writer possesses all the graces of ornament—polished periods, figurative language, harmonious expressions, and a great degree of purity in the choice of his words, all characterized by perspicuity and propriety. He is one, in short, who delights the fancy and the ear, while he informs the understanding.

A florid or flowery writer is characterized by excess of ornament; and seems to be more intent on beauty of language than solidity of thought.

A simple or natural writer is distinguished by simplicity of plan; he makes his thoughts appear to rise naturally from his subject; he has no marks of art in his expressions, and although he may be characterized by great richness both of language and imagination, he appears to write in that way not because he had studied it, but because it is the mode of expression most natural to him. The charm of such a style is evident to all readers.

An affected writer is the very reverse of a simple one. He uses words in uncommon meanings—employs pompous expressions—and his whole manner is characterized by singularity rather than by beauty.

A vehement writer uses strong expressions—is characterized by considerable warmth of manner—and presents his ideas clearly and fully before us.

The following directions are given by Dr. Blair for attaining a good style:

The first direction is, study clear ideas of the subject on which you are to write or speak. What we conceive clearly and feel strongly, we naturally express with clearness and strength.

Secondly, to the acquisition of a good style, frequency of composing is indispensably necessary. But it is not every kind of composition that will improve style. By a careless and hasty habit of writing, a bad style will be acquired. In the beginning, therefore, we ought to write slowly and with much care. Facility and speed are the fruit of experience.

Thirdly, acquaintance with the style of the best authors is peculiarly requisite. Hence a just taste will be formed, and a copious fund of words supplied on every subject. No exercise, perhaps, will be found more useful for acquiring a proper style than translating some passage from an eminent author in our own words, and then comparing what we have written with the style of the author. Such an exercise will show us our defects, will teach us to correct them, and, from the variety of expression which it will exhibit, will conduct us to that which is most beautiful.

Fourthly, caution must be used against servile imitation of any author whatever.



SPECIMEN OF BLACK-BOARD FLOURISHING

Desire of imitation hampers genius, and generally produces stiffness of expression. They who copy an author closely, commonly copy his faults as well as his beauties. It is much better to have something of our own, though of moderate beauty, than to shine in borrowed ornaments, which will at last betray the poverty of our genius.

Fifthly, always adapt your style to the subject, and likewise to the capacity of your hearers or readers. When we are to write or speak, we should previously fix in our minds a clear idea of the end aimed at; keep this steadily in view, and adapt our style to it.

Lastly, let no attention to style engross us so much as to prevent a higher degree of attention to the thoughts. He is a contemptible writer who looks not beyond the dress of language; who lays not the chief stress upon his matter, and employs not such ornaments of style as are manly, not foppish.

"It is a useful admonition to young writers," says Archbishop Whately, "that they should always attempt to recast a sentence that does not please; altering the arrangement and entire structure of it, instead of merely seeking to change one word for another. This will give a great advantage in point of copiosness also; for there may be, suppose a *substantive* (or noun) which, either because it does not fully express our meaning, or for some other reason, we wish to remove, but can find no other to supply its place. But the object may be easily accomplished by means of a verb, adverb, or other part of speech, the substitution of which implies an alteration in the construction. It is an exercise, accordingly, which may be commended as highly conductive to improvement of style to practice casting a sentence into a variety of different forms."

The foregoing practical rules should be carefully noted and followed.

THE ENGLISH LANGUAGE.

THE English language consists of about thirty-eight thousand words. This includes, of course, not only radical words, but all derivatives; except the preterits and participles of verbs; to which must be added some few terms, which, though set down in the dictionaries, are either obsolete or have never ceased to be considered foreign.

Of these, about twenty-three thousand, or nearly five-eighths, are of Anglo-Saxon origin. The majority of the rest, in what proportion we cannot say, are Latin and Greek; Latin, however, has the larger share. The names of the greater part of the objects of sense—in other words, the terms which occur most frequently in discourse, or which recall the most vivid conceptions—are Anglo-Saxon. Thus, for example, the names of the most striking objects in visible nature, of the chief agencies at work there, and of the changes which pass over it, are Anglo-Saxon. This language has given names to the heavenly bodies, the sun, the moon, and stars; to three of the four elements, earth, fire, and water; three out of the four seasons, spring, summer and winter; and, indeed, to all the natural divisions of time, except one; as, day, night, morning, evening, twilight, noon, midday, midnight, sunrise, sunset; some of which are amongst the most poetical terms we have.

To the same language we are indebted for the names of light, heat, cold, frost, rain, snow, hail, sleet, thunder, lightning, as well as almost all of those subjects which form the component parts of the beautiful in external scenery, as sea and land, hill and dale, wood and stream, etc.

It is from this language we derive the words which are expressive of the earliest and dearest connections, and the strongest and most powerful feelings of nature; and

which are, consequently, invested with our oldest and most complicated associations. It is this language which has given us names for father, mother, husband, wife, brother, sister, son, daughter, home, kindred, friends.

It is this which has furnished us with the greater part of those metonymies, and other figurative expressions, by which we represent to the imagination, and that in a single word, the reciprocal duties and enjoyments of hospitality, friendship, or love. Such are hearth, roof, fireside. The chief emotions, too, of which we are susceptible, are expressed in the same language, as love, hope, fear, sorrow, shame; and what is of more consequence to the orator or poet, as well as in common life, the outward signs by which emotion is indicated are almost all Anglo-Saxon; such are tear, smile, blush, to laugh, to weep, to sigh, to groan.

Most of those objects, about which the practical reason of man is employed in common life, receive their names from the Anglo-Saxon. It is the language for the most part of business; of the counting-house, the shop, the market, the street, the farm; and, however miserable the man who is fond of philosophy or abstract science might be, if he had no other vocabulary but this, we must recollect that language was made not for the few, but the many, and that portion of it which enables the bulk of a nation to express their wants and transact their affairs, must be considered of at least as much importance to general happiness, as that which serves the purpose of philosophical science.

Nearly all our national proverbs, in which, it is truly said, so much of the practical wisdom of a nation resides, and which constitute the manual and *vade mecum* of "hobnailed" philosophy, are almost wholly Anglo-Saxon. A very large proportion (and that always the strongest) of the language of invective, humor, satire, colloquial pleasantry, is Anglo-Saxon. Almost all the terms and phrases by which we most energetically express anger, contempt, and indignation, are of Anglo-Saxon origin. The Latin contributes most largely to the language of polite life, as well as to that of polite literature.

Again, it is often necessary to convey ideas, which, though not truly and properly offensive in themselves, would, if clothed in the rough Saxon, appear so to the sensitive modesty of a highly refined state of society; dressed in Latin, these very same ideas will seem decent enough. There is a large number of words, which, from the frequency with which they are used, and from their being so constantly in the mouths of the vulgar, would not be endured in polished society, though more privileged synonyms of Latin origin, or some classical circumlocution, expressing exactly the same thing, pass unquestioned.

There may be nothing dishonest, nothing really vulgar about the old Saxon word, yet it would be thought as uncouth in a drawing-room, as the ploughman to whose rude use it is abandoned. Thus, the word "*stench*" is lavendered over into *unpleasant effluvia*, or or *an ill odor*; "sweat," diluted into four times the number of syllables, becomes a very inoffensive thing in the shape of "perspiration." To "squint" is softened into obliquity of vision; to be "drunk" is vulgar; but, if a man be simply intoxicated or inebriated, it is comparatively venial. Indeed, we may say of the classical names of vices, what Burke more questionably said of vices themselves, "that they lose half their deformity by losing all their grossness."

In the same manner, we all know that it is very possible for a medical man to put to us questions under the seemly disguise of scientific phraseology and polite circumlocu-

tion, which, if expressed in the bare and rude vernacular, would almost be as nauseous as his draughts and pills. Lastly, there are many thoughts which gain immensely by mere novelty and variety of expression. This the judicious poet, who knows that the connection between thoughts and words is as intimate as that between body and spirit, well understands. There are thoughts in themselves trite and common-place, when expressed in the hackneyed terms of common life, which, if adorned by some graceful or felicitous novelty of expression, assume an unwonted air of dignity and elegance. What was trivial, becomes striking; and what was plebeian, noble.

COMMON ERRORS IN WRITING AND SPEAKING.

There are many popular errors in writing and speaking our language. It may be well to notice some of them here.

We often hear the phrase, from educated lips at that, "Between you and I." It should be, "Between you and me."

Many persons say, "What beautiful bread!" It should be, "What nice bread!"

Instead of, "A new pair of shoes," say, "A pair of new shoes."

Do not say, "Restore it back to me," but "Restore it to me."

Instead of, "I seldom or ever meet her," say, "I seldom meet her."

Instead of, "If I am not mistaken," say, "If I mistake not."

Do not say, "Not no such thing," but "Not any such thing."

Instead of, "I had rather walk," say, "I would rather walk."

Instead of, "Let you and I," say, "Let you and me."

Instead of, "Rather warmish," say, "Rather warm."

Instead of, "What a nice view," say, "What a beautiful view."

Do not say, "Bred and born." It should be, "Born and bred."

Instead of, "If I was him," say, "If I were he."

Do not say, "I have less friends than you.' It should be, "I have fewer friends than you."

In reply to the question, "Who is there?" or, "Who is it?" say, "I," or, "It is I;" and not, "Me," or, "It is me."

"Whether I be present or no," is wrong. It should be, "Whether I be present or not."

Instead of, "I had better go," say, "It were better that I should go."

"A quantity of people," is wrong. It should be, "A number of people."

"Six weeks back," is a barbarism. It should be, "Six weeks ago."

"A new pair of gloves." It should be, "A pair of new gloves."

Instead of saying, "He was in eminent danger," say, "He was in imminent danger."

"Thinks I to myself," "Thinks I," "Sa I," "Says he," are vulgarisms and should avoided.

Instead of, "I only want ten cents," "I want only ten cents."

"Because why?" is a barbarism. It should be simply, "Why?"

"The best of the two," is wrong. Say, "The better of the two."

"There's fifty," is incorrect. It should be, "There are fifty."

"He need not do it," is wrong. Say, "He needs not do it."

Instead of, "It was spoke in my presence,' say, "It was spoken in my presence."

"She said, said she," is vulgar, as well as incorrect. It should be, "She said."

Instead of saying, "My clothes have grown

too small for me," say, "I have grown too stout for my clothes." The change is in you, not in your clothes.

Do not say, "On either side of the street." It should be, "On each side of the street."

"I took you for another person," is incorrect. It should be, "I mistook you for another person."

Instead of, "His health has been shook," say, "His health has been shaken."

Instead of, "That there man," say, "That man."

Instead of, "Somehow or another," say, "Somehow or other."

Instead of, "Will I do this for you?" say, "Shall I do this for you?"

Instead of, "What will I do?" say, What shall I do?"

Instead of, "Following up a principle," say, "Guided by a principle."

Instead of saying, "I belong to the Masonic order," say, "I am a member of the Masonic order."

Instead of, "I enjoy bad health," say, "My health is not good."

"Better nor that," is vulgar and wrong. It should be, "Better than that."

Instead of saying, "She was remarkable pretty," say, "She was remarkably pretty."

Instead of, "We think on you," say, "We think of you."

Instead of, "By this means," say, "By these means."

Instead of, "All that was wanting," say, "All that was wanted."

Instead of, "He is a bad statesman," say, "He is not a statesman."

Instead of saying, "I am going over the bridge," say, "I am going across the bridge."

Instead of saying, "I left you behind at Omaha," say, "I left you behind me at Omaha."

Instead of saying, "He ascended up the mountain," say, "He ascended the mountain."

Instead of, "Mine is so good as yours," say, "Mine is as good as yours."

Instead of, "Adequate for," say, "Adequate to."

The phrase, "Pure and unadulterated," is a repetition of terms. If a thing is pure, it is necessarily unadulterated.

Instead of saying, "They are not what nature designed them," say, "They are not what nature designed them to be."

Instead of, "How do you do?" say, "How are you?"

Instead of, "To be given away gratis," say, "To be given away."

Instead of, "I acquit you from," say, "I acquit you of."

Instead of, "I live opposite the park," say, "I live opposite to the park."

Instead of, "The want of wisdom, truth and honor are more visible," say, "The want of wisdom, truth and honor is more visible."

Instead of, "A surplus over and above," say, "A surplus."

Instead of, "A winter's morning," say, "A winter, or wintry, morning."

Instead of, "I will send it conformable to your orders," say, "I will send it conformably to your orders."

Instead of, "This ten days or more," say, "These ten days or more."

Instead of, "I confide on you," say, "I confide in you."

Instead of, "As soon as ever," say, "As soon as."

Instead of, "I differ with you," say, "I differ from you."

Instead of, "I am averse from that," say, "I am averse to that."

Instead of, "The very best," or, "The very worst," say, "The best," or, "The worst"

Instead of, "No one has'nt called," say, "No one has called."

Two negatives make an affirmative. Thus, to say, "Don't give that child no more sugar," is equivalent to saying, "Give that child some more sugar."

Instead of saying, "I won't never do it again," say, "I will never do it again."

Instead of, "I am conversant about it," say, "I am conversant with it."

Instead of, "He died by consumption," say, "He died of consumption."

Instead of, "The effort I am making for arranging this matter," say, "The effort I am making to arrange this matter."

Instead of saying, "Your obedient humble servant," say, "Your obedient servant."

Instead of, "You are taller than me," say, "You are taller than I."

Instead of, "You are mistaken," say, "You mistake."

Instead of, "I suspect the veracity of his story," say, "I doubt the truth of his story."

Instead of, "He was too young to have suffered much," say, "He was too young to suffer much."

Instead of, "I hope you'll think nothing on it," say, "I hope you'll think nothing of it."

Instead of, "His opinions are approved of by all," say, "His opinions are approved by all."

Instead of, "Handsome is as handsome does," say, "Handsome is who handsome does."

Instead of, "In case I succeed," say, "If I succeed."

Instead of, "They loved one another," say, "They loved each other."

Instead of, "The cake is all eat up," say, "The cake is eaten."

Instead of, "The river is all froze up," say, "The river is frozen."

Instead of, "A large enough house," say, "A house large enough."

Instead of, "We are travelling slow," say, "We are travelling slowly,"

Instead of, "It is raining hard," say, "It is raining fast."

Instead of saying, "The box fell on the floor," say, "The box fell to the floor."

Instead of saying, "He is noways to blame," say, "He is nowise to blame."

Instead of saying, "He is tall in comparison to her," say, "He is tall in comparison with her."

Instead of, "I went for to see him," say, "I went to see him."

Instead of, "He jumped off the platform," say, "He jumped from the platform."

Instead of, "A man of eighty years of age," say, "A man eighty years old."

Instead of, "No, thank'ee," say, "No, I thank you."

Instead of, "I cannot continue without farther means," say, "I cannot continue without further means."

Instead of, "I thought I should have won this game," say, "I thought I should win this game."

Instead of, "He has got money," say, "He has money."

Instead of, "I have got to be there," say, "I must be there."

Instead of "Have you saw?" say, "Have you seen?"

Instead of, "I seen him do it," say, "I saw him do it."

Instead of, "No other but," say, "No other than."

Instead of, "He rose up from his chair," say, "He rose from his chair."

Instead of, "I knew it previous to his telling me," say, "I knew it previously to his telling me."

Instead of, "It is equally of the same value," say, "It is of the same value."

Instead of, "I could scarcely believe but what," say, "I could scarcely believe but that."

Instead of, "You was out when he was here," say, "You were out when he was here."

Instead of, "She was a woman notorious for her beauty," say, "She was a woman noted for her beauty."

Instead of, "I do so every now and then," say, "I do so occasionally."

Instead of, "Nobody else but me," say, "Nobody but me."

Instead of, "He fell down from the roof," say, "He fell from the roof."

Instead of, "Except I am detained," say, "Unless I am detained."

Instead of, "What may, or what might your name be?" say, "What is your name?"

Instead of, "She was a woman celebrated for her wickedness," say, "She was a woman notorious for her wickedness."

Instead of, "I find him in clothes," say, "I provide him with clothes."

Instead of, "He stands six foot high," say, "He is six feet high."

Instead of, "The two first, the three first, etc.," say, "The first two, the first three, etc."

Instead of, "The first of all," "The last of all," say, "The first," "The last."

Instead of, "Shay," say "Chaise."

Instead of, "The then Government," say, "The Government of that time, period, etc."

Instead of, "For ought I know," say, "For aught I know."

Instead of, "Before I do that I must first ask leave," say, "Before I do that I must ask leave."

Instead of, "I never dance whenever I can help it," say, "I never dance when I can help it."

Instead of, "The observation of the rule," say, "The observance of the rule."

Instead of, "To get over this trouble," say, "To overcome this trouble."

Instead of, "He is a very rising person," say, "He is rising rapidly."

Instead of, "I expected to have found you, say, "I expected to find you."

Instead of, "I said so over again," say, "I repeated it."

Instead of, "Will you enter in?" say, "Will you enter?"

Instead of, "Undeniable references," say, "Unexceptionable references."

Instead of, "Undisputable proofs," say, "Indisputable proofs."

Instead of, "Whatsomever," say, "Whatsoever."

Instead of, "When he was come back," say, "He had come back."

Instead of, "Two spoonsful of sugar," say, "Two spoonfuls of sugar."

Instead of, "Was you talking just now?" say, "Were you talking just now?"

Instead of, "Him and me went together," say, "He and I went together."

Instead of, "He has went home," say, "He has gone home."

Instead of, "I intend to summons him," say, "I intend to summon him."

Instead of, "She is now forsook by her friends," say, "She is now forsaken by her friends."

Instead of, "Who done it?" say, "Who did it?"

Instead of, "Who's got my book?" say, "Who has my book?"

Instead of, "I have rode ten miles to-day," say, "I have ridden ten miles to-day."

Instead of, "Set down," say, "Sit down."

Instead of, "Have you lit the fire?" say, "Have you lighted the fire?"

Instead of, "I have always gave him

good advice," say, "I have always given him good advice."

Instead of, "Have you seen the Miss Browns yet?" say, "Have you seen the Misses Brown yet?"

Instead of, "French is spoke in polite society," say, "French is spoken in polite society."

Instead of, "He is now very decrepid." say, "He is now very decrepit."

Instead of, "You have drank too much," say, "You have drunk too much."

Instead of, "He has broke a window," say, "He has broken a window."

Instead of, "Who do you mean?" say, "Whom do you mean?"

Instead of, "It was them who did it," say, "It was they who did it."

Instead of, "It is me who am in fault," say, "It is I who am in fault."

Instead of, "If I was rich, I would do this," say, "If I were rich, I would do this."

Instead of, "It is surprising the fatigue he undergoes," say, "The fatigue he undergoes is surprising."

Instead of, "He knows little or nothing of the matter," say, "He knows little, if anything, of the matter."

Instead of, "He is condemned to be hung," say, "He is condemned to be hanged."

Instead of, "We conversed together on the subject," say, "We conversed on the subject."

Instead of, "He had sank before we could reach him," say, "He had sunk before we could reach him."

Instead of, "His loss shall be long regretted," say, "His loss will be long regretted."

Instead of, "He speaks distinct," say, "He speaks distinctly."

Instead of, "We laid down to sleep," say, "We lay down to sleep."

Instead of, "Let it be never so good," say, "Let it be ever so good."

Instead of, "He is known through the land," say, "He is known throughout the land."

Instead of, "I lost near ten dollars," say, "I lost nearly ten dollars."

Instead of, "I am stopping with a friend," say, "I am staying with a friend."

Instead of, "He was now retired from public life," say, "He had now retired from public life."

Instead of, "Who did you inquire for?" say, "For whom did you inquire?"

Instead of, "Such another mistake," say, "Another such mistake."

Instead of, "He combined together these facts," say, "He combined these facts."

Instead of, "He covered it over with earth," say, "He covered it with earth."

Instead of, "I acquiesce with you," say, "I acquiesce in your proposal, or in your opinion."

Instead of, "He is a distinguished antiquarian," say, "He is a distinguished antiquary."

Instead of, "He did it unbeknown to us," say, "He did it unknown to us."

Instead of, "I fear I shall discommode you," say, "I fear I will incommode you."

Instead of, "I could not forbear from doing it," say, "I could not forbear doing it."

Instead of, "He is a man on whom you can confide," say, "He is a man in whom you can confide."

Instead of, "I can do it equally as well as he," say, "I can do it as well as he."

Instead of, "I am thinking he will soon arrive," say, "I think he will soon arrive."

Instead of, "He was obliged to fly the country," say, "He was obliged to flee the country."

Instead of, "A house to let," say, "A house to be let."

Instead of, "Before I do that I must first be paid," say, "Before I do that I must be paid."

Instead of, "A couple of dollars," say, "Two dollars." The word couple implies a union of two objects.

Instead of, "You are like to be," say, "You are likely to be."

Instead of, "All over the land," say, "Over all the land."

Instead of, "I shall fall down," say, "I shall fall."

Instead of, "Either of the three," say, "Any of the three."

Instead of, "They both met," say, "They met."

Instead of, "From hence," say, "Hence."

Instead of, "From thence," say, "Thence."

Instead of, "From here to there," say, "From this place to that."

Instead of, "Either of them are," say, "Each of them is."

Instead of, "A most perfect work," say, "A perfect work."

Instead of, "The other one," or, "Another one," say, "The other," or, "Another."

Instead of, "My every hope," say, "All my hopes."

Instead of, "For good and all," say, "For ever."

Instead of, "He lives at Troy," say, "He lives in Troy."

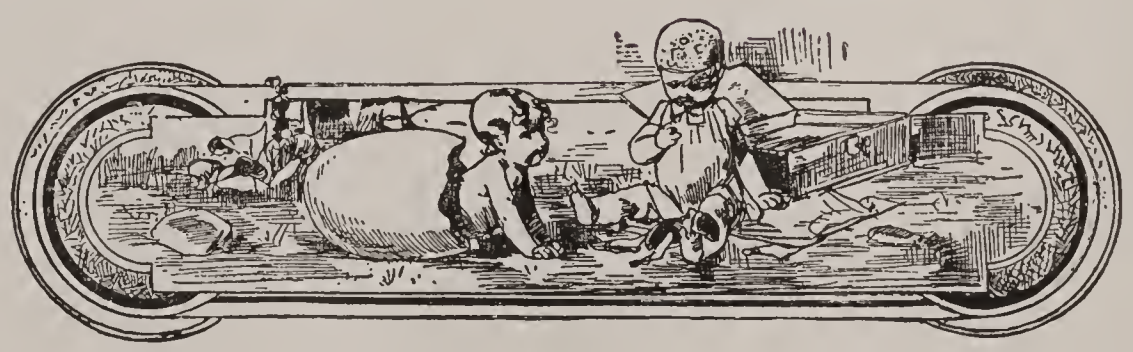
Instead of, "I am coming to your house," say, "I am going to your house."

Instead of, "I suspicioned him," say, "I suspected him."

Instead of, "They mutually loved each other," say, "They loved each other."

Instead of, "Of two evils choose the least," say, "Of two evils choose the less."

Instead of, "If I were her, I would do it," say, "If I were she, I would do it."



VOCAL CULTURE AND ELOCUTION

SO much depends on the voice in effective reading and singing that its thorough cultivation is indispensable to all who would excel in these noble arts. A sedentary mode of life, the want of invigorating exercise, close and long-continued application of mind, and, perhaps, an impaired state of health, or a feeble constitution, prevent, in many instances, the free and forcible use of those muscles on which voice is dependent. Hence arises, to students of elocution, the necessity of practicing physical exercises, adapted to promote general muscular vigor, as a means of attaining energy in vocal functions, the power of any class of muscles being dependent on the tone of the whole system.

The art of cultivating the voice, however, has, in addition to the various forms of bodily exercise practiced for the general purpose of promoting health, its own specific prescriptions for securing the vigor of the vocal organs, and modes of exercise adapted to the training of each class of organs separately.

The results of such practice are of indefinite extent; they are limited only by the energy and perseverance of the student, excepting, perhaps, in some instances of imperfect organization. A few weeks of diligent cultivation are usually sufficient to produce such an effect on the vocal organs, that persons who commence practice with a feeble and ineffective utterance attain, in that short period, the full command of clear, forcible, and varied tone.

Expanding the Chest.

Gymnastic and calisthenic exercises are invaluable aids to the culture and development of the voice, and should be sedulously practiced when opportunity renders them accessible. But even a slight degree of physical exercise, in any form adapted to the expansion of the chest, and to the freedom and force of the circulation, will serve to impart energy and glow to the muscular apparatus of voice, and clearness to its sound.

There is, therefore, a great advantage in always practicing some preliminary muscular actions as an immediate preparation for vocal exercise. These actions may be selected from the system of preparatory movements taught at gymnastic establishments, or they may be made to consist in regulated walking, with a view to the acquisition of a firm, easy

and graceful carriage of the body, with appropriate motion of the arms and limbs—in the systematic practice of gesture in its various forms, for the purpose of obtaining a free, forcible and effective use of the arm as a natural accompaniment to speech—or in the practice of attitude and action combined, in the most vivid style of lyric and dramatic recitation, so as to attain a perfect control over the whole corporeal frame, for the purposes of visible expression.

EXERCISES IN BREATHING.

Some preliminary exercises, such as the preceding, having been performed, and a sufficient period of rest and tranquil breathing having elapsed, the next stage of preparatory action may be as in the following directions:

1. Attitude of the Body.

Place yourself in a perfectly erect but easy posture, the weight of the body resting on one foot, the feet at a moderate distance, the one in advance of the other, the arms akimbo, the fingers pressing on the abdominal muscles in front, and the thumbs on the dorsal muscles on each side of the spine, the chest freely expanded and fully projected, the shoulders held backward and downward, the head perfectly vertical.

The object in view, in this apparently minute direction, is to secure perfect freedom and repose of body. A constrained or a lounging posture is utterly at variance with a free, unembarrassed use of the voice or the production of a clear and full sound.

2. Exercises in Deep Breathing.

Having thus complied with the preliminary conditions of a free and unembarrassed action of the organs, draw in and give out the breath very fully and very slowly, about a dozen times in succession. Let the breathing be deep and tranquil, but such as to cause the chest to rise fully and fall freely at every effort.

3. Effusive, or Tranquil Breathing.

Draw in a very full breath, and send it forth in a prolonged sound of the letter *h*. In the act of inspiration, take in as much breath as you can contain. In that of expiration, retain all you can and give out as little as possible—merely sufficient to keep the sound of *h* audible. But keep it going on, as long as you can sustain it. In this style of respiration the breath merely *effuses* itself into the surrounding air.

4. Expulsive, or Forcible Breathing.

Draw in a very full breath, as before, and emit it with a lively expulsive force in the sound of *h*, but little prolonged—in the style of a moderate whispered cough. The breath, in this style of expiration, is *projected* into the air. Repeat this exercise, as directed, in the statement preceding.

5. Explosive, or Abrupt Breathing.

Draw in the breath, as already directed, and emit it with a sudden and violent explosion in a very brief sound of the letter *h*—in the style of an abrupt and forcible but whispered cough. The breath is, in this mode of expiration, thrown out with abrupt *violence*. Repeat this exercise as before directed.

The habit of keeping the chest open and erect, is indispensable to the production of a full, round tone of voice. But it is of still higher value, as one of the main sources of health, animation and activity.

The effect, on the student, of the preceding exercises in breathing, is usually soon perceptible in an obvious enlargement of the chest, an habitually erect attitude, an

enlivened style of movement, a great accession of general bodily vigor, an exhilarated state of feeling, and an augmented activity of mind. To persons whose habits are studious and sedentary, and especially to females, the vigorous exercise of the organs of respiration and of voice, is, in every point of view, an invaluable discipline.

ELEMENTARY EXERCISES.

The following exercises are intended to prevent, or to correct, the prevalent errors of colloquial usage; they embrace all the elementary sounds of the English language, with the most important among those that occur in combinations which are liable to mispronunciation. A correct and careful articulation of them, if practiced with due frequency and continued for a length of time *sufficient to render accuracy habitual*, will secure a distinct and appropriate enunciation, in all exercises of reading and speaking. To attain this result, the following points require particular attention.

First.—That the exercises be always performed with great force and clearness of articulation, so as to become a useful form of discipline to the organs. The aim should be, in every case, to give *the utmost articulate force of which the voice is capable.*

Second.—The *sound* of each element should be perfectly at command, before proceeding to the enunciation of the words in which they are exemplified.

Third.—Great care must be taken to avoid a formal and fastidious prominence of sound, on unaccented syllables: every word, though uttered with the utmost energy, must retain *the proportions of accented* and *unaccented syllables* in their natural and appropriate pronunciation. It is grotesque to hear a speaker laying great stress on some unimportant syllable.

Table of Elementary Sounds of the English Language.

The elements contained in this table should be practiced, with and *without* the words in which they are exemplified, with great attention to accuracy, and repeated as a daily preliminary exercise.

Vowel Sounds.

A, as in the word Fate; *AI*, as in Ail; *AY*, as in Lay; *A*, as in Far; *AU*, as in Launch; *A*, as in Fall; *AW*, as in Awe; *AU*, as in Laud; *A*, as in Fat; *A*, as in Wash; *A*, as in Rare; *AI*, as in Air; *AY*, as in Prayer; *E*, as in Me; *EE*, as in Eel; *EA*, as in Eat; *IE*, as in Field; *E*, as in Met; *EA*, as in Head; *E*, as in Err; *EA*, as in Heard; *I*, as in Firm; *I*, as in Pine; *Y*, as in Rhyme; *I*, as in Pin; *Y*, as in Hymn; *O*, as in No; *OA*, as in Oak; *OU*, as in Course; *OW*, as in Own; *O*, as in Move; *OO*, as in Mood; *U*, as in True. *O*, as in Nor; *O*, as in Not; *O*, as in Done; *U*, as in Tub; *U*, as in Tube; *U*, as in Pull; *O*, as in Wolf.

Diphthongs.

OI, as in Oil; *OY*, as in Boy; *OU*, as in Pound; *OW*, as in Down.

Consonants.

Labial Sounds.—*B*, as in Bulb; *P*, as in Pulp; *M*, as in Mime; *W*, as in Wan; *V*, as in Vane; *F*, as in Fife; *PH*, as in Phial; *GH*, as in Laugh.

Dental Sounds.—*D*, as in Dead; *T*, as in Tent; *TH*, as in Thin; *TH*, as in Thine; *J*, as in Joy; *G*, as in Giant; *CH*, as in Church; *SH*, as in Shape; *TI*, as in Nation; *CI*, as in Gracious; *CE*, as in Ocean; *S*, as in Hiss; *C*, as in Cipher; *S*, as in Trees; *Z*, as in Haze; *S*, as in Measure.

Palatic Sounds.—*K*, as in Key; *C*, as in Cake; *CH*, as in Chorus; *Q*, as in Queen; *G*, as in Gag; *Y*, as in Ye.

Aspirate.—*H*, as in Hail.

Nasal Sounds.—*N*, as in No; *NG*, as in Sing; *N*, as in Finger, Sink.

Lingual Sounds.—*L*, as in Lull; *R*, as in Rude; *R*, as in War.

Palatic and Dental Sounds combined.—*X*, as in Ox; *X*, as in Example.

These sounds constitute all the elements of articulation in the English language. The exercises which follow are merely various examples of these rudiments as they occur in different combinations. The exercises are also designed for lessons in pronunciation, as this branch, not less than that of articulation, is much neglected in early instruction, and the practice of the one conveniently comprises that of the other.

The main purpose of reading and speaking is to communicate thought. The most important point in elocution, therefore, is a distinct and correct enunciation, without which it is impossible to be rightly and clearly understood. The chief design, accordingly, of this department of education is, by appropriate exercise, to cultivate the organs of speech, to strengthen and discipline the voice, and, at the same time, to eradicate incorrect habits of utterance which may have been contracted through early neglect.

Errors in Articulation.

The common hindrances to distinct enunciation may, as far as articulation is concerned, be classed as follows:

First.—*Feebleness*, arising from a want of full and forcible emission of voice, and of due energy in the action of the organs, particularly the tongue, the teeth and the lips.

Second.—*Omission*, a fault occasioned by undue rapidity or hurry, and sometimes by an inadvertent compliance with incorrect custom.

Third.—*Obscurity*, caused by the want of precision and accuracy in the functions of the organs, and a consequent want of definiteness or correctness in the sounds of letters and syllables.

The rule of practice, therefore, in regard to the exercises of reading and speaking, should be: *Always to articulate with such energy, deliberateness, and accuracy, that every sound of the voice may be fully and exactly formed, distinctly heard, and perfectly understood.* A drawling slowness, however, and a pedantic or irregular prominence of unaccented syllables, should be carefully avoided. Faults arising from slovenliness, and those which seem to spring from misdirected study, are equally objectionable.

PRONUNCIATION.

This department of elocution is sometimes termed *orthoepy* (correct speech). Speech being merely a collection of arbitrary sounds, used as signs of thought or feeling, it is indispensable to intelligible communication that there be a general agreement about the signification assigned to given sounds, as otherwise there could be no common language. It is equally important that there be a common consent and established custom to regulate and fix the sounds used in speech, that these may have a definite character and signification, and become the current expression of thought.

Hence the necessity that individuals conform in their habits of speech to the rules prescribed by general usage—or, more properly speaking, to the custom of the educated and intellectual classes of society, which is, by courtesy, generally acknowledged as the law of pronunciation. Individual opinion, when it is at variance with this important and

useful principle of accommodation, gives rise to eccentricities, which neither the authority of profound learning, nor that of strict accuracy and system, can redeem from the charge of pedantry.

It is a matter of great importance to recognize the rule of authorized custom, and neither yield to the influence of those errors which, through inadvertency, will creep into occasional or local use, nor, on the other hand, be induced to follow innovations or changes adopted without sufficient sanction.



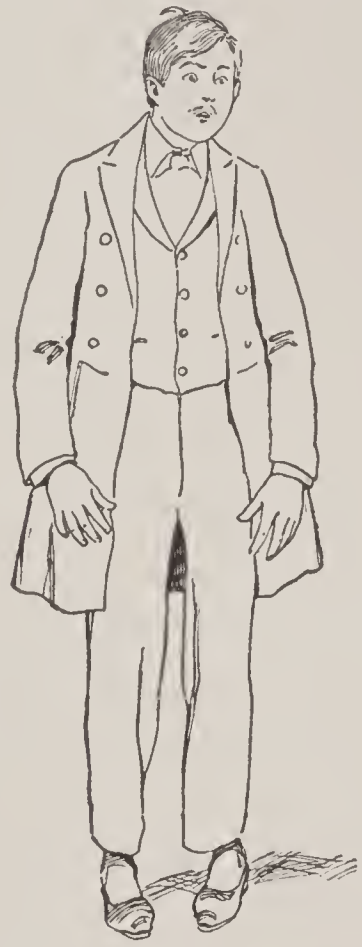
THE GRACEFUL SPEAKER.

A cultivated taste is always perceptible in pronunciation, as in every other expression of mind, and errors in pronouncing are unavoidably associated with a deficiency in the rudiments of good education.

An occasional appeal to the dictionary must, therefore, be useful to the majority of persons. Persons who are desirous of perfecting their pronunciation would do well to read aloud, daily, a few columns, and mark with a pencil those words which they find they have been accustomed to mispronounce themselves or to hear mispronounced by others.

FORCE.

A primary characteristic of utterance, as expressive of emotion, is the degree of its energy or force. The effect of any feeling on sympathy is naturally inferred from the degree of force with which the sound of voice, in the utterance of that feeling, falls upon the ear of the hearer. The cause of this impression upon the mind is, obviously, the law of organic sympathy, by which one part of the



THE AWKWARD SPEAKER.

human frame naturally responds to another. A powerful emotion not only affects the heart and the lungs, and the other involuntary agents of life and of expression, but starts the expulsory muscles into voluntary action and produces voice, the natural indication and language of feeling.

The degree of force, therefore, in a vocal sound is intuitively taken as the measure of the emotion which causes it. Except, only, those cases in which the force of feeling paralyzes, as it were, the organs of the voice

and suggests the opposite measure of inference, by which a choked and struggling utterance, a suppressed or inarticulate voice, or even absolute silence, becomes the index to the heart.

The command of all degrees of force of voice must evidently be essential to true and natural expression, whether in reading or speaking. Appropriate utterance ranges through all stages of vocal sound, from the whisper of fear and the murmur of repose to the boldest swell of vehement declamation and the shout of triumphant courage. But to give forth any one of these or the intermediate tones, with just and impressive effect, the organs must be disciplined by appropriate exercise and frequent practice, for every day's observation proves to us that mere natural instinct and animal health, with all the aids of informing intellect, and inspiring emotion, and exciting circumstances, are not sufficient to produce the effects of eloquence, or even of adequate utterance.

The want of due training for the exercise of public reading or speaking is evinced in the habitual undue loudness of some speakers and the inadequate force of others, the former subjecting their hearers to unnecessary pain, and the latter to disappointment and uneasiness.

STRESS.

The term "stress" is applied to the mode in which force is rendered perceptible or impressive in *single sounds*. The classification of the forms of stress is as follows:

First.—*Radical stress*, or that in which the force of utterance, is usually more or less "explosive," and falls on the "radical" (initial, or first) part of a sound.

Second.—*Median stress*, that in which the force is "expulsive" or "effusive," and swells out, whether slowly or rapidly, at the middle of a sound.

Third.—*Vanishing stress*, or that which withholds the "expulsive" or "explosive" force till the "vanish," or last moment of the sound.

Fourth.—*Compound stress*, or that in which the voice, with more or less of "explosive" force, touches forcefully and distinctly on both the initial and the final points of a sound, but passes slightly and almost imperceptibly over the middle part.

Fifth.—*Thorough stress*, in which the initial, middle and final portions of a sound are all distinctively and impressively marked by special "expulsive force" of voice.

Sixth.—*Tremor*, tremulous, or intermittent "stress."

MELODY.

The word "melody" may be applied to speech in the same general sense as in the technical language of music, to designate the effect produced on the ear, by the *successive notes* of the voice, in a passage of music or of discourse.

The use of this term presupposes, both in music and in speech, a certain "pitch," or initial note, whether predominating in a passage, or merely commencing it, and to which the subsequent sounds stand in the relation of higher or lower or identical.

The term "melody," used as above, does not necessarily imply a *melodious* or pleasing succession of sounds, or the reverse. It has regard merely to the fact just mentioned, that the successive sounds to which this term is applied, are comparatively higher or lower on the musical scale, or in strict unison with the first sound of a series. In this technical sense, the word "melody" applies to speech as well as to music.

PITCH.

The word "melody," used in its technical sense, occupies, then, the same ground in

elocution as in music, and refers us, in the first instance, to an initial or commencing sound to which others in a series may be compared as high or low or neither. To this sound the term "pitch" is applied, as designating the particular point of the scale, as high or low, on which the voice is thrown out. Thus, we speak of the deep tones or low notes of an organ, as contrasted with the shrill sound of a fife, of the grave tone of the voice of a man, or of the comparatively high pitch of that of a woman; or of the low voice of devotion, as contrasted with the high, shrill scream of excessive fear, or the piercing shriek of terror.

The correct practice of elocution, as in appropriate speaking, recitation, or reading, implies the power of easily and instantly shifting the "pitch" of the voice, according to the natural note of emotion required for every shade of expression depicted in the composition which is spoken, recited, or read.

Middle Pitch.

The "middle" pitch of the voice is that of our habitual utterance, on all occasions of ordinary communication in conversation or address. It implies a medium or average state of feeling, or a condition of mind free from every strong or marked emotion. It is the natural note of unimpassioned utterance, seeking to find its way to the understanding rather than to the heart, and hence avoiding high or low pitch, as belonging to the language of feeling or of fancy.

Common conversation, a literary or a scientific essay, a doctrinal sermon, or a plain practical discourse on any subject limited to purposes of mere utility, and demanding the action of judgment and reason, principally, may be mentioned as examples of "middle" pitch, which is natural in ordinary speech.

Low Pitch.

This designation applies to the utterance of those feelings which we are accustomed to speak of as "deeper" than ordinary. Low notes seem the only natural language of grave emotions, such as accompany *deeply serious and impressive thoughts*, *grave authority*, or *austere manner*.

The transition in the voice from "middle" to "low" pitch would be exemplified in passing from the utterance of a thought which is merely *serious*—and so termed in contradistinction rather to one of an animated and sprightly character—to that of one still deeper in its shade of feeling, and which would be appropriately termed *grave*. At the stage of voice expressive of the latter, we should perceive an obvious though not very strikingly marked deepening of tone, or descent on the scale.

Very Low Pitch.

This designation applies to the notes of those emotions which are of the deepest character, and which are accordingly associated with the deepest utterance. These are, chiefly, the following: *deep solemnity*, *awe*, *amazement*, *horror*, *despair*, *melancholy* and *deep grief*.

This lowest form of pitch is one of the most impressive means of powerful natural effect in the utterance of all deep and impressive emotions. The pervading and absorbing effect of *awe*, *amazement*, *horror*, or any similar feeling, can never be produced without low pitch and deep successive notes; and the depth and reality of such emotions are always in proportion to the depth of voice with which they are uttered. The grandest descriptions in the Paradise Lost, and the profoundest meditations in the Night Thoughts, become trivial in their effect on the ear, when read with the ineffectual

expression inseparable from the pitch of ordinary conversation or discourse.

High Pitch.

The higher portion of the musical scale is associated with the notes of *brisk*, *gay* and *joyous* emotions, with the exception of the *extremes* of *pain*, *grief* and *fear*, which, from their preternaturally exciting power, compress and render rigid the organic parts that produce vocal sound, and cause the peculiarly shrill, convulsive cries and shrieks which express those passions.

A "pitch" too low for the natural effect of gay and exhilarated feeling deadens the effect of wit and vivacity, and renders, perhaps, a most expressive strain of composition tame and dull, when it should abound in the tones of life and brilliancy.

Very High Pitch.

The extreme of the upper part of the musical scale, as far as it is practicable to individuals in the management of the voice, is the natural range of pitch for the utterance of *ecstatic* and *rapturous* or *uncontrollable emotion*. It belongs, accordingly, to *high-wrought lyric* and *dramatic passages*, in strains of *joy*, *grief*, *astonishment*, *delight*, *tenderness*, and the *hysterical* extremes of passionate emotion generally.

INFLECTION.

Reading without inflections becomes lifeless, as may be observed in what is usually called a "schoolboy tone." This fault not only divests language of its meaning, but substitutes a ludicrous monotony for the natural, animated and varied expression of the voice in actual communication. The hearer unavoidably loses all interest in what is monotonously read, for it makes no appeal either to his feelings or to his understanding.

There are two inflections—the rising and the falling. The falling appropriately terminates a sentence; the rising may be seen in any ordinary interrogation. The variations of voice between these two inflections prevent monotony.

The two *simple* inflections, the rising and the falling, are superseded, in the tones of keen and ironical emotion or peculiar significance in expression, by a *double* turn, or slide of voice, which unites both in one continuous sound, called the *circumflex*, or wave.

When no inflection is used, a *monotone*, or perfect level of voice, is produced. This tone belongs to emotions arising from sublimity and grandeur. It characterizes, also, the extremes of amazement and horror.

TIME.

The study of *time*, as a measure of speech, will lead to the primary classification of *single* vowel sounds as *long* or *short* in duration, according to their character and expression, as elements of language. The contrast in the duration of the "tonic element," or vowel sound, *a*, in the words *male* and *female*, will furnish examples, the *a* in the former being much longer, or, in other words, occupying a much larger space of time in utterance, than the *a* in the latter. The technical designation of this property of vocal sounds is "quantity"—implying quantity of time, or duration. The *a* of *male* is, accordingly, termed a "*long*," the *a* in *female* a "*short quantity*."

PAUSES.

Time, when applied as a measure of speech, prescribes not only the length, or "quantity," of *sounds*, but also that of the *pauses*, or cessations of voice, which intervene between sentences and between their parts, as the intermissions of the voice are, *virtually*, constituents of "expression," whether we regard

thought or feeling. Without distinct and appropriate pauses we cannot understand oral communication, and without occasional impressive cessations of voice there can be no true sympathy between speaker and hearer.

Pauses, as classified in elocution, are of two kinds: 1st, those which express *emotion;* 2d, those which modify *sense*, or meaning. Pausing, like utterance, is regulated by the character of the emotion or the thought which is the subject of expression. The pauses used in the "expression" of all *grave*, *deep* and *solemn* emotions, which incline to prolonged "quantities," are comparatively *long*, and thus correspond in character to the vocal sounds between which they occur, and which they aid by their harmonious effect. *Brisk*, *gay* and *lively* feelings are distinguished by brief "quantities" and corresponding short pauses.

The pauses of *sense* or *meaning* are of various lengths, according to the portions of speech which they are employed to separate; thus, we observe the long pauses between the principal parts of a discourse, the somewhat shorter pauses at its subdivisions, the shorter still at paragraphs, and the shorter than even these at periods.

MOVEMENT.

The term "movement," for which the word "rate" is sometimes substituted refers to the slowness or to the rapidity of utterance required by the sentiment.

The "slowest," or "very slow movement," is exemplified in the expression of the *deepest emotions* of the soul; as *horror*, *awe*, *profound reverence* and *solemnity*, and *adoration*.

The "slow movement" characterizes the utterance of *gloom*, *melancholy*, *grief*, *pathos*, *sublimity*, *solemnity* and *reverence*, in their usual form, *profound repose*, *grandeur*, *majesty*, *vastness*, *power* and *splendor*.

"Moderate movement" is the usual rate of utterance in unimpassioned language. It belongs to common narration and description, and to didactic thought. The rhetorical modes of style to which it is applicable, are those which are denominated the "dry," the "plain," and the "neat."

"Lively movement" implies emotion in that gentle form which does not exceed *liveliness* or *animation*. *The lower degrees of all vivid feeling*, are expressed by this style of "movement." A *slight* degree of *joy* is usually the under current of its effect.

Gay and Mirthful.

"Quick" or "brisk movement," is characteristic of *gay*, *exhilarated* and *glad* emotion: the *full* feeling of joy is implied in its "expression." It gives utterance to all *playful*, *humorous* and *mirthful moods*. It sometimes, on the other hand, gives its characteristic effect to *fear*.

The "movement" designated as "quickest," "very quick," or "rapid," is that of *haste*, *hurry*, *alarm*, *confusion* and *fear*, when rising to *terror*.

It is evident from the very nature of "movement," that it must be an element of immense power, in expression. The funeral march suggests to the ear its effect, in music, as associated with *awe*, *gloom* and *grief;* and the music of the dance reminds us of its power over the feelings of *gladness* and *exhilaration*. The grave psalm, and the song of serious sentiment, express, in their measured regularity, the adaptation of *gentle* and "*moderate movement*" to *tranquil* and *sedate* feeling.

The power of "movement," in the elocution of a skilful reader or speaker, is indefi-

nite; as we may observe in the difference between a schoolboy gabbling through his task, in haste to get rid of it, and a great tragedian, whose whole soul is rapt in the part of Cato uttering the soliloquy on immortality, or Hamlet musing on the great themes of duty, life and death.

A command over the "lively" and "brisk movements" of the voice, is not less important than the power of slow and solemn utterance. The style of reading which is most frequently introduced to enliven the evening circle at home, requires of the reader the power to "trip it as he goes," in the mood of *gay description*, *light satire*, *vivid dialogue* and *droll humor*.

The three principal faults of "movement," which are exemplified in the common practice of reading, are *uniform slowness*, or, perhaps, a *drawling* style; *habitual rapidity*, which *prevents* all *deep* and *impressive* effect, and, perhaps, causes *indistinctness of enunciation;* a *uniform "moderate"* "movement," which never yields to any natural influence of emotion—so as to become appropriately expressive, and pass from *grave* to *gay*, or the reverse, by a change in the gait of the voice—but utters, automaton-like, all feelings in the same unmeaning and mechanical style; the voice marching on, with one uniform measured step, over all varieties of surface, as regards the tenor of language and the subject.

EMPHASIS.

Every sentence contains one or more words which are prominent, and peculiarly important in the expression of meaning. Special force on such words is what is called emphasis. Its use is to impress more strikingly on the mind of the hearer the thought, or portion of thought, embodied in the particular word or phrase on which it is laid. It gives additional energy to important points in expression, by causing sounds which are peculiarly significant, to strike the ear with an appropriate and distinguishing force. It possesses, in regard to the sense of hearing, a similar advantage to that of "relief," or prominence to the eye, in a well executed picture; in which the figures seem to stand out from the canvass.

Emphasis, then, being the manner of pronouncing the most significant words, its office is of the utmost importance to an intelligible and impressive utterance. It is the manner of uttering emphatic words which decides the meaning of every sentence that is read or spoken. A true emphasis conveys a sentiment clearly and forcibly to the mind, and keeps the attention of an audience in active sympathy with the thoughts of the speaker; it gives full value and effect to all that he utters, and secures a lasting impression on the memory.

Errors of Emphasis.

The prevailing fault, as regards emphasis, is the *omission* or *slighting* of it.

Hence arises a feebleness of expression, or a general monotony, in consequence of which the voice fails in giving those distinctions, or conveying that force of feeling, which are inseparable from a distinct and animated manner.

An omission of emphasis leaves the sense of whole passages obscure; and an error in the application of it, may cause an entire subversion of the meaning intended to be expressed. A sentence read without just emphasis, is an inert mass of sound, like a body destitute of life; the same sentence read with the discrimination and significance of true emphasis, becomes, as it were, a living and active being, exerting its appropriate energies.

The opposite fault is that of *excessive anxiety about emphasis*, and *an unnecessary and formal marking of it by studied force of expression*.

This obtrusive tone is carefully to be avoided, as savoring of fastidiousness and pedantry, and indicating the presumption that the audience are so dull in intellect as not to appreciate the force of the speaker's language, unless he remind them of it by peculiar and pointed distinctions of voice, a thing which he does not need to do.

GESTURE.

ADDRESS, as a combination of speech and action, directs itself to the mind through the ear and the eye. Regarded as an art, it consists, accordingly, of two parts—elocution, or the regulated functions of the voice, and gesture, or the proper management of the body.

Gesture derives its existence from the necessary sympathy of mind and body. It is by no means a mere product of art. A sympathetic action of the outward frame, in correspondence with the activity of the mind, is necessarily exerted in the communication of thought and feeling, and results from a law of man's constitution. The repression of such action may, it is true, become a habitual trait in the character of individuals and of nations; so may the opposite characteristic of redundancy in gesture. Examples of these extremes are furnished in the rigid stillness of body which is customary in the elocution of Scotland or of New England, and in the ceaseless movement and gesture of the French.

Education, too, has a powerful influence on delivery. The exclusive application of the understanding, a too passive continuance of attention, or a native sluggishness of habit, indulged, has a tendency to quell or prevent emotion, and to keep back its bodily indications; while the habitual and unrestrained play of imagination, or of feeling, impels to vivid expression in tone, and to the visible manifestations of attitude and action. Hence the contrasts of manner exhibited in the



PRESENTING OR RECEIVING.

delivery of the studious and sedentary, or the phlegmatic, and that of the active, the gay, or the imaginative—both of which usually run to excess, producing the morbid style of lifelessness and inaction, or the puerile manner of mere animal vivacity.

The genuine style of eloquence is that, surely, which gives the strongest, freest and truest expression to the natural blending of thought and emotion within the human breast—breaking through all arbitrary re-



ANNOUNCING.

straint, and submitting only to the guidance of reason, or, rather, listening intuitively to its suggestions.

The common errors of judgment and taste on this subject seem to lie in the supposition that thought and feeling may be separated in their expression. Every day furnishes examples of speakers, who, from the coldness of their manner, seem to think that they can succeed in imparting sentiment without emotion, and of those whose rhetorical and mechanical warmth appears to aim at eloquence by emotion not founded on thought.

The tendency of deep interest, and of earnest, cordial emphasis, is always to impart impulse to the arm, as well as to the voice. The instruction, therefore, or the example, which inculcates the suppression of gesture, is defective and injurious, as it checks the free action both of body and mind. The unlimited indulgence in fancy, or the ungoverned expression of feeling, on the other hand, leads either to a puerile or merely passionate manner, and loses the influence of intellect in a false excitement of emotion.

A good address is that which, in the first place, may be briefly characterized by the epithet *manly*. It possesses *force*—consequently exemption from all forms of weakness; *freedom* (a natural consequence of force), implying exemption from constraint and embarrassment. These are the first and indispensable rudiments of action.

Next in importance is an *appropriate* or discriminating style—the result of genius, or of successful discipline—which adapts itself to different occasions, subjects and sentiments; varying as circumstances require, and avoiding every impropriety of manner, whether



DECLARING.

arising from personal habit or temporary inadvertency and error.

Last in order, and as a negative quality, chiefly, may be mentioned *grace*, or those modes of action which obey nature's laws of symmetry and motion, from the intuitive

perception of beauty, and the disciplined or natural subjection of the muscular system to the ascendancy of mind and taste.

These elementary principles are all that have been deemed important in the instruction attempted in the following pages. All else, it is thought, may best be left to the mind and manner of the individual—which, if not perverted or neglected, would, perhaps, render direct instruction, in any case, comparatively unimportant.

ATTITUDE.

Oratory consists of two parts—one addressing the ear through the voice, and the other, the eye by action or gesture. The latter implies a certain *attitude* of body as essential to it, and hence the necessity of attending, in the first instance, to the attitude



WONDERMENT.

or position in which the speaker presents himself to the eye. The characteristics of good attitude are *firmness*, *freedom*, *appropriateness* and *grace*.

It becomes necessary here to advert to the manner in which young speakers introduce themselves to their audience, the introductory bow being seldom what it should be—a salutation of respect, actually addressed to the assembly, but commonly a very awkward *attempt* at a bow, and one so performed as to cast down the eyes towards the floor



GLADNESS.



MEDITATION.

of the room or the feet of the speaker, and to show, not his countenance, but *the crown of his head*. A bow, or any other mark of respect (except prostration), has no meaning in it, unless the eye of the individual who performs it is directed to the eyes of those to whom it is addressed.

POSITION OF THE FEET.

It is of the utmost consequence to observe a correct position of the feet, not merely because an incorrect position is ungraceful, but because the easy and natural movement of every part of the body, depends on the feet being properly placed. Awkward and constrained movements of the feet, and rigid, unseemly action, are inseparable from a bad attitude. An easy and graceful position, on the contrary, favors appropriate and becom-

ing movement, and tends to render it habitual.

In the various positions of the feet, care is to be taken that the grace which is aimed at be attended with simplicity. The position of the orator is equally removed from the awkwardness of the rustic, with toes turned in and knees bent, and from the affectation of the dancing-master, whose position runs to the opposite extreme. The orator is to adopt such positions only as consist with manly and simple grace.



DESIGNATING.

The toes are to be moderately turned outward, but not to be constrained; the limbs are to be disposed so as to support the body with ease, and to admit of flowing and graceful movement. The sustaining foot is to be planted firmly; the leg braced, but not contracted; the other foot and limb must press lightly, and be held relaxed, so as to be ready for immediate change and action.

In changing the positions of the feet, the motions are to be made with the utmost simplicity, and free from the parade and sweep of dancing. The speaker must advance, retire or change almost imperceptibly; and it is to be particularly observed that changes should not be too frequent. Frequent change gives the idea of anxiety or instability, both of which are unfavorable.

Errors.

The common faults in the position of the feet, are:

First.—*That of resting on both feet equally*, which gives the whole frame a set and rigid attitude.



SILENCE.

Second.—*Pointing the toes straight forward*, which, when combined with the preceding fault, forms the climax of awkwardness and squareness of attitude, and, even when unaccompanied by any other error, has the bad effect of exposing the speaker's side, instead of his full front, and consequently assimilating all his movements and gestures to those of attack in fencing.

Third.—*Placing the feet too close* to one another, which gives the whole body a feeble and constrained appearance, and destroys the possibility of energy in gesture.

Fourth.—*The placing of the feet too widely distant, and parallel* to each other, which gives the speaker's attitude a careless and slovenly air.

Fifth.—*The placing of the feet at too wide a distance from each other, but with the one in advance of the other.* This is the attitude of assumption, or of a boasting and overbearing manner.

The observance of the different positions will produce a firm, easy and graceful attitude, appropriate to earnest and natural delivery. *In complying with rules, however, there should be no anxiety about measured exactness, and no appearance of studied precision.* Force and freedom, and general propriety of manner, are the main points to be aimed at, and strict accuracy is apt to become but a mechanical excellence.



REPULSION.

MOVEMENT OF THE FEET.

An occasional change of the position of the feet is a natural and necessary relief to the speaker in the delivery of a speech or piece of considerable length; it associates, also, in an appropriate and agreeable manner, with the introduction of a new train of thought or a new topic of discourse, and it is the instinctive expression of energy, warmth and liveliness of manner. Without movement, the speaker's body becomes, as it were, a mass of inanimate matter. Motion,



ANGUISH.



REMORSE.

when carried to excess, however, becomes childish in its effect, as it substitutes restlessness for animation.

The motion of the feet should be carefully timed, so as to occur at the commencement of the parts or divisions of a speech or discourse, at the introduction of new and distinct thoughts, or in the expression of forcible or lively emotion. The true time of movement is in exact coincidence with emphasis, and falls appropriately on the accented syllable of the emphatic word. The voice and the bodily frame are thus kept in simultaneous action with the mind.

Movement, so performed, never obtrudes itself on the attention, but becomes a natural part of the whole delivery. The changes of position should always be made (except only the retiring movement, at the close of a

paragraph or of a division of the subject) *during the act of speaking*, and not at the pauses; and even the change of posture which necessarily follows the bow, and opens the delivery of the piece, should not be made before beginning to speak, but along with the utterance of the commencing clause.



PROTECTING—SOOTHING.

All changes made before speaking, or in the intervals of speech, become apparent and formal, and particularly all preparatory motions that seem to adjust or fix the attitude of the speaker and produce the effect of suspending the attention of the audience. The frequency of movement depends on the spirit of the composition. An animated address or a declamatory harangue requires frequent movement. In a grave discourse, on the contrary, the movements are made more seldom. Poetry requires, from its vividness of emotion, many changes of position; prose, from its more equable character, comparatively few.

Your movements should always be easy and natural, never forced and constrained, never apparently studied beforehand.

MOVEMENT OF THE LIMBS.

The general air and expression of the whole body depend much on the position of the legs; as we may observe by adverting to the feeble limbs of infancy and of old age, the rigid and square attitude of men who follow laborious occupations, or the artificial display of limb sometimes acquired at the dancing-school, or exemplified on the stage.

A firm, free and graceful position of the limbs is natural to most human beings, till the influence of awkward custom, or of imperfect health, has destroyed or impaired it. Correct and appropriate posture, therefore, becomes an important point in preparatory



EXALTATION.

practice and training, intended to aid the formation of habits of rhetorical delivery.

Incorrect Attitudes.

Errors in the position of the legs occur in the following forms:

First.—*A rigid and inflexible posture*, entirely at variance with freedom and grace; causing the limbs to resemble supporting posts, rather than parts of the human frame;

and interfering with the force, ease and gracefulness of gesture.

Second.—*A feeble, though perhaps slight bending of the knees*, which gives the general attitude an appearance of timid inefficiency; and which, when accompanied, as it often is, by a sinking and rising motion, seeming to keep time to the beat of the arm in gesture, produces a childishness of mien which throws over the speaker's whole manner an air of silliness.

Third.—A fault very prevalent in public declamation arises from overlooking the fact that *a free and natural attitude requires the knee of the leg which is not supporting the weight of the body, to fall into the natural bend of freedom and rest.* The neglect of this point—a neglect which very naturally arises from general embarrassment or constraint—has a very unfavorable effect on the whole attitude.



DENYING—REJECTING.

The influence of this attitude is quite at variance with the speaker's aim in delivery, which is to convince or persuade; the effect of which, on his attitude, would be to incline it somewhat forward, as in the natural manner of earnest address. No error, apparently so slight, is attended with so many bad consequences as this; nothing tends so much to give the speaker the air of speaking *at* his audience, rather than *to* them; yet no fault is more common in the declamation of school and college exhibitions. All that is objectionable in this attitude, however, would be done away by the speaker merely allowing the knee of the leg which does not support the body to drop into its natural bend.



DISCERNING.

MOVEMENT OF THE TRUNK.

The actions of a human being differ from the motions of a machine, chiefly in that sympathy of the entire frame which makes action appear to proceed from the whole surface and terminate in the arm, the hand, or the foot.

No gesture, therefore, seems to have life or energy unless the whole body partake in it, by a moderate yet perceptible swaying or yielding to accommodate it, and a general impulse of the muscles to enforce it, or impart to it additional and sympathetic energy.

Gesture, destitute of such aid, becomes narrow, angular and mechanical. It is of the utmost consequence, then, that the position and general bearing of the body should be free and unconstrained.

The gesture of the arms and hands must receive a slight accompanying movement of



AWE—APPEAL.

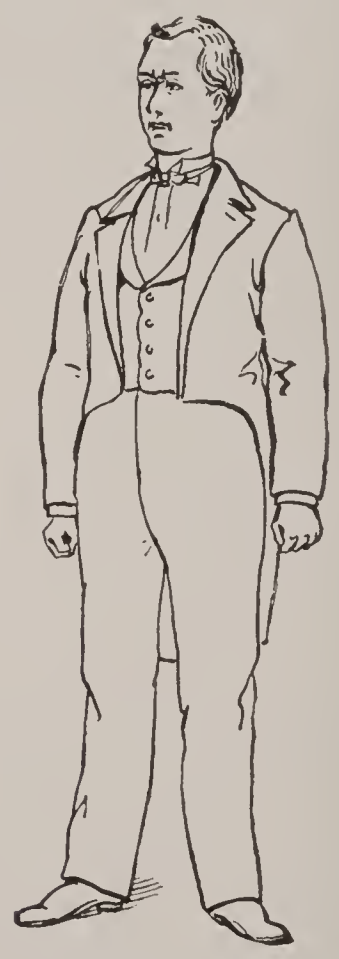
the trunk, and not proceed from it as from a rigid log. Whilst care is taken to avoid affected and ridiculous contortions, there must be a manly and free exertion of the muscles of the whole body, the general consent of which is indispensable to graceful action.

MOVEMENT OF THE HEAD AND THE COUNTENANCE.

The bearing of the head decides the general mien of the body, as haughty and condescending, as spiritless, dejected, embarrassed, or as free from the influence of such feelings, and wearing an easy, self-possessed and unassuming expression, arising from tranquility and serenity of mind. The first-mentioned of these states of feeling inclines the head upward; the second causes it to droop or keeps it fixed by constraint; the last preserves it from these extremes, and allows it an easy and natural motion.

The recitation of poetry may, in particular instances, authorize or require a very erect, or a drooping posture of the head; but declamation, or public speaking, implies a state of self-command, a rational consideration of effect, and an avoiding of the appearances of extreme emotion. In the latter exercise, therefore, the general air of the head bespeaks respect for the audience, mingling with a just self-respect, and avoids alike a lofty or a submissive carriage. The eyes and the other features correspond to this manner.

The head should neither be hung bash-



DEFIANCE.

fully down nor carried haughtily erect; it should turn easily, but not rapidly, from side to side; the eyes being directed generally to those of the persons who are addressed, but not fastening particularly on individuals.

The abstraction of the mind, implied in the appropriate recitation of some pieces of

poetry, may, however, render it inconsistent to give to delivery the air of address; as, for example, in the reciting of any passage in which a distant or imaginary scene is called up vividly to the thoughts. The eyes should, in such cases, be directed away from those of the audience and be fixed on vacancy. All inappropriate and ungraceful play or working of the features, should be carefully avoided.

POSITION AND MOVEMENT OF THE HAND.

The hand is, in most forms of action, the great organ of the mind. Its power of expression in communication, when used alone, or accompanied by speech, is peculiar and



DISPERSION.

extensive. The position or action of the hand invites, repels, refuses, rejects, implores or threatens more forcibly than even the voice or the countenance. The language and meaning of gesture lie in the hand; and these cannot be expressed without an appropriate use of this organ. The arm is, in gesture, but the inferior agent to move and exert the hand, the great instrument of all expression addressed to the eye.

The tones of the voice and the action of the features are, no doubt, the chief vehicles of meaning. But next to these comes the hand as an important agent in delivery; and in some kinds of emotion it even takes the precedence of the voice; in all those passions,



INDECISION.

for instance, which by their excess tend to render the tongue mute. In unimpassioned speaking, the gesture of the hand is not so prominent; but it still serves a useful purpose in accompanying, aiding and enforcing the impressions produced by the voice. It helps to concentrate the action of the senses toward the objects which are presented to the mind, and, though a subordinate, is yet an indispensable instrument of appropriate and impressive delivery.

The hand should be used naturally. Point with the finger; open the palm; close the hand and form a rigid fist; let the hand droop in a languid attitude; in short, *speak* with it, according to the thought or emotion you wish to express.

MOVEMENT OF THE ARM.

The freedom and force of gesture depend entirely on the appropriate action of the arm. The free play of the arm gives scope to gesture, which would otherwise be narrow, confined and inexpressive. The elevated thoughts and grand images abounding in poetry require a free, lofty and energetic sweep of the arm in gesture; but speaking which has persuasion for its object, is naturally characterized by a less commanding and less imaginative style of action.

Reasoning, arguing or inculcating, in the usual manner of speech, requires chiefly enforcing or emphatic gesture. Poetry abounds so in variety of emotion, that the action which accompanies the recitation of it is frequent and forcible, and marked by vivid transitions, with a predominance of gracefulness in the whole manner. The style of speaking adapted to prose is more calm and moderate, and more plain in its character, coinciding thus with the tenor of thought and language which usually pervades prose composition.

Action is the first, the simplest and the most striking expression of feeling. It cannot, therefore, be dispensed with, but at the risk of losing the natural animation of manner. Under the regulation of taste, it becomes a harmonious and powerful accompaniment to speech, imparting additional force to language in all its forms, and aiding a full and clear conception of what is expressed.

Gesture is not a mere matter of ornament, as is sometimes supposed. Its main object is force of impression; the beauty or grace which it imparts to delivery is but an inferior consideration. To the young learner, however, whose habits are yet forming, the cultivation of correct and refined taste in regard to gesture, is a matter of great importance.

The following are the principal gestures appropriate in address:

The *descending*, used with great energy in strong assertion and vehement argumentation, in emphatic declaration and forcible appeal.

The *horizontal* (the hand rising to a horizontal level with the shoulder), appropriate in elevated and general thought or description and in geographical and historical allusions.

The *ascending* (the hand rising to a level, nearly, with the head), expressive of sublimity of thought or feeling.

RULES FOR GESTURE.

The movement or sweep of the arm, in preparing for gesture, should always be free and graceful, but avoiding *too much extent of space*, and performed in *strict time with the movement of the voice* in utterance. The line of motion in gesture describes *a curve*, and avoids in all action but that of the humorous style a confined or angular movement.

The frequency of gesture must be prescribed by *the character of sentiment* in the piece which is spoken, and by the style of language, as moderate and plain, or impassioned and figurative; the former requiring little use of gesture, and the latter much.

All action must arise directly from *the sense of what is spoken, and never from arbitrary notions of variety or grace*. True variety is the result of a due observance of the preparatory and terminating lines of gesture; and grace consists merely in preserving these from awkward deviations.

The use of the left hand, whether singly or in conjunction with the right, depends not on arbitrary opinions of propriety or grace, but usually on necessity felt by the speaker,

either as regards himself or his audience. This form of gesture, as far as it is a matter of choice, *should be sparingly adopted.*

Gesture should be *fluent and connected*, not abrupt and desultory, or appearing and disappearing in a capricious manner.

The placing of the hand on the heart had better be omitted, if any risk must be incurred of an incorrect or objectionable action by performing it.

Gesture appropriate to the prevailing style of prose unites force and grace with simplicity, and has generally an outward and downward tendency combined; *avoiding action which runs across the body of the speaker or sweeps inwardly.*

EXAMPLES WHICH ILLUSTRATE THE PRINCIPLES OF ELOCUTION.

Declamatory Force.

FOR, as the ages, come and go,
The leaders of the van
Are proof that this is ever so—
The hour begets the man!
He's Nature's heir, and he alone
Has right and title to her throne.

Not wealth, nor yet a long descent
Through many a famous line,
Can give this power to mankind lent
From Nature's hand divine,
For with the call there comes the might
Of those who teach, or preach, or fight.

Moderate Force.

CHEERFULNESS.

IS this a time to be gloomy and sad,
When our mother Nature laughs around;
When even the deep blue heavens look glad,
And gladness breathes from the blossoming ground?

The clouds are at play, in the azure space,
And their shadows at play on the bright green vale,
And here they stretch to the frolic chase,
And there they roll on the easy gale.

And look at the broad-faced sun how he smiles
On the dewy earth that smiles on his ray,
On the leaping waters and gay young isles,
Ay, look, and he'll smile thy gloom away.

PATHOS.

CALM on its leaf-strewn bier,
Unlike a gift of Nature to decay,—
Too rose-like still, too beautiful, too dear,—
The child at rest before its mother lay;—
Even so to pass away,
With its bright smile!—Elysium, what were thou
To her that wept o'er that young slumberer's brow?

SOLEMNITY.

THOU unrelenting Past!
Strong are the barriers round thy dark domain;
And fetters, sure and fast,
Hold all that enter thy unbreathing reign.

Far in thy realm withdrawn
Old empires sit in sullenness and gloom;
And glorious ages gone
Lie deep within the shadow of thy womb.

Childhood, with all its mirth,
Youth, Manhood, Age, that draws us to the ground,
And last, Man's Life on earth,
Glide to thy dim dominions, and are bound.

TRANQUILITY.

WHY weep ye, then, for him, who, having won
The bound of man's appointed years,—at last,
Life's blessings all enjoyed, life's labors done,
Serenely to his final rest has passed;
While the soft memory of his virtues yet,
Lingers like twilight hues, when the bright sun is set!

His youth was innocent ; his riper age,
  Marked with some act of goodness, every day ;
And, watched by eyes that loved him, calm and sage
  Faded his late declining years away.
Cheerful he gave his being up, and went
To share the holy rest that waits a life well spent.

SPRIGHTLY HUMOR.

SAYS Patrick to Biddy, "Good mornin', me dear,
  It's a bit av a sacret I've got for yer ear ;
  It's yersel' that is lukin' so charmin' the day,
That the heart in me breast is fast slippin' away."
"'Tis you that kin flatther," Miss Biddy replies,
And throws him a glance from her merry blue eyes.

Impassioned Force.

FEAR.

WHILE throng the citizens with terror dumb,
  Or whispering with white lips, "The foe !—
    they come, they come !"

ANGER AND SCORN.

THOU slave, thou wretch, thou coward,
  Thou little valiant, great in villany !
  Thou ever strong upon the stronger side,
  Thou fortune's champion, that dost never fight
  But when her humorous ladyship is by
  To teach thee safety.

HORROR.

GOD ! that horrid, horrid dream
  Besets me now awake ;
Again, again, with dizzy brain,
  The human life I take ;
And my red right hand grows raging hot
  Like Cranmer's at the stake.

REPROACH.

GOD is my judge ! May I never see such a look of despairing, desolate anguish, as that which the woman cast on her master, griping her breast with her little hand, as if he had stabbed her.

ANGUISH.

A WOMAN ? Yes, only a woman !
  No ! surely it wasn't his wife ?
She seemed dead ! and he wrestled for freedom,
  As a doomed man will struggle for life.
"It is she ! gracious God ! Is she dying ?
  Or dead, sirs ?—say, tell if you can ?
Unhand me ! who murdered my poor wife ?"
  And a voice answered—"*Thou art the man!*"

MILITARY COMMAND.

Explosive Whispering.

HARK ! I hear the bugles of the enemy ! They are on their march along the bank of the river. We must retreat instantly, or be cut off from our boats. I see the head of their column already rising over the height. Our only safety is in the screen of this hedge. Keep close to it ; be silent ; and stoop as you run. For the boats ! Forward !

REPULSION.

DEPART ! depart, O child
  Of Israel, from the temple of thy God ;
  For He has smote thee with His chastening rod,
And to the desert wild
  From all thou lov'st, away thy feet must flee,
  That from thy plague His people may be free.

INVOCATION.

VIRGINIUS tottered nigh
  And stood before the judgment seat, and held the knife on high ;
"O dwellers in the nether gloom, avengers of the slain,
By this dear blood I cry to you, do right between us twain ;
  And e'en as Appius Claudius hath dealt by me and mine,
  Deal you by Appius Claudius and all the Claudian line."

Vanishing Stress.

EARNEST PURPOSE.

WE'VE sworn, by our country's assualters,
  By the virgins they've dragged from our altars,
By our massacred patriots, our children in chains,
By our heroes of old, and their blood in our veins,
  That living, we *will* be victorious,
  Or that dying, our deaths shall be glorious.

STERN REBUKE.

WHAT shall I say to thee, Lord Scroop, thou cruel,
  Ungrateful savage, and inhuman creature !
Thou didst bear the keys of all my counsels,
That knew'st the very bottom of my soul,
That almost might have coined me into gold,
Wouldst thou have practised on me for thy use ?"

GRIEF.

MY captain does not answer, his lips are pale and still.
  My father does not feel my arm, he has no pulse nor will.

The ship is anchored safe and sound, its voyage
closed and done,
From fearful trip the victor ship comes in with
object won;
Exult, O shores, and ring, O bells!
But I, with mournful tread,
Walk the deck, my captain lies
Fallen cold and dead.

Exercises on Pitch.

LOW NOTES.

NOT a drum was heard, nor a funeral note,
As his corse to the rampart we hurried;
Not a soldier discharged his farewell shot
O'er the grave where our hero we buried.

We buried him darkly, at dead of night,
The sod with our bayonets turning,
By the struggling moonbeam's misty light,
And the lantern dimly burning.

MIDDLE NOTES.

MY thoughts, I must confess, are turned on
peace;
Already have our quarrels filled the world
With widows and with orphans: Scythia mourns
Our guilty wars; and earth's remotest regions
Lie half unpeopled by the feuds of Rome.
'Tis time to sheath the sword and spare mankind.
We took up arms, not to revenge ourselves,
But free the Commonwealth. When this end fails
Arms have no further use. Our country's cause,
That drew our swords, now wrests them from our
hands,
And bids us not delight in Roman blood
Unprofitably shed. What men could do,
Is done already. Heaven and earth will witness,
If Rome must fall, that we are innocent.

HIGH NOTES.

BUT thou, O Hope! with eyes so fair,—
What was thy delighted measure?
Still it whispered promised pleasure,
And bade the lovely scenes at distance hail!
Still would her touch the strain prolong;
And from the rocks, the woods, the vale,
She called on Echo still through all her song:
And where her sweetest theme she chose,
A soft responsive voice was heard at every close;
And Hope enchanted smiled, and waved her golden
hair.

Exercises on Time.

SLOWEST RATE.

NIGHT, sable goddess! from her ebon throne,
In rayless majesty now stretches forth
Her leaden sceptre o'er a slumbering world,
Silence, how dead! and darkness how profound!
Nor eye nor listening ear an object finds:
Creation sleeps. 'Tis as the general pulse
Of life stood still, and Nature made a pause—
An awful pause—prophetic of her end.

SLOW.

BENEATH those rugged elms, that yew tree's
shade,
Where heaves the turf in many a mouldering
heap,
Each in his narrow cell forever laid,
The rude forefathers of the hamlet sleep.

For them no more the blazing hearth shall burn,
Or busy housewife ply her evening care;
No children run to lisp their sire's return,
Or climb his knees, the envied kiss to share.

MODERATE.

IF the relation of sleep to night, and, in some instances, its converse be real, we cannot reflect without amazement, upon the extent to which it carries us. Day and night are things close to us: the change applies immediately to our sensations; of all the phenomena of nature, it is the most obvious, and the most familiar to our experience: but, in its cause, it belongs to the great motions which are passing in the heavens. Whilst the earth glides aronnd her axle, she ministers to the alternate necessities of the animals dwelling upon her surface, at the same time that she obeys the influence of those attractions which regulate the order of many thousand worlds.

The relation, therefore, of sleep to night, is the relation of the inhabitants of the earth to the rotation of their globe: probably it is more; it is a relation to the system of which that globe is a part; and still farther, to the congregation of systems of which theirs is only one. If this account be true, it connects the meanest individual with the universe itself; a chicken roosting upon its perch, with the spheres revolving in the firmament.

LIVELY.

IN thy right hand lead with thee
The mountain nymph, sweet Liberty;
And, if I give thee honor due,
Mirth, admit me of thy crew,
To live with her, and live with thee,
In unreprovéd pleasures free:
To hear the lark begin his flight,
And, singing, startle the dull night,
From his watch-tower in the skies,
Till the dappled dawn doth rise;
Then to come, in spite of sorrow,
And at my window bid good morrow,
Through the sweet briar or the vine,
Or the twisted eglantine.

QUICK.

NOW the storm begins to lower ;
(Haste, the loom of hell prepare ;)
Iron sleet of arrowy shower
Hurtles in the darkened air.

Ere the ruddy sun be set,
Pikes must shiver, javelins sing,
Blade with clattering buckler meet,
Hauberk crash, and helmet ring.

Sisters, hence with spurs of speed !
Each her thundering falchion wield ;
Each bestride her sable steed :
Hurry, hurry, to the field !

Exercises on Inflection.

FALLING.

WHEN night
Closes round the ghastly fight,
If the vanquished warrior bow,
Spare him ;—by our holy vow,
By our prayers and many tears,
By the mercy that endears,
Spare him !—he our love hath shared ;—
Spare him, as thou wouldst be spared !

RISING.

BUT while they sit contriving, shall the rest,
Millions that stand in arms, and longing wait
The signal to ascend, sit lingering here,
Heaven's fugitives ; and for their dwelling-place
Accept this dark opprobious den of shame,
The prison of his tyranny who reigns
By our delay !

Exercises in Movement.

SLOWEST.

I HAD a dream which was not all a dream.
The bright sun was extinguished ; and the stars
Did wander darkling in the eternal space,
Rayless and pathless ; and the icy earth
Swung blind and blackening in the moonless air ;
Morn came, and went—and came, and brought no day.
The world was void ;
The populous and the powerful was a lump,—
Seasonless, herbless, treeless, manless, lifeless,—
A lump of death—a chaos of hard clay.
The rivers, lakes, and ocean, all stood still ;
And nothing stirred within their silent depths.
Ships, sailorless, lay rotting on the sea ;
And their masts fell down piecemeal : as they dropped
They slept on the abyss without a surge ;—
The waves were dead ; the tides were in their grave ;
The moon, their mistress, had expired before ;
The winds were withered in the stagnant air ;
And the clouds perished : Darkness had no need
Of aid from them—She was the universe.

SLOW.

ANON out of the earth a fabric huge
Rose like an exhalation, with the sound
Of dulcet symphonies, and voices sweet,
Built like a temple, where pilasters round
Were set, and Doric pillars, overlaid
With golden architrave ; nor did there want
Cornice, or frieze, with bossy sculptures graven ;
The roof was fretted gold. Not Babylon,
Nor great Alcairo, such magnificence
Equalled in all their glories, to enshrine
Belus, or Serapis, their gods ; or seat
Their kings, when Egypt with Assyria strove
In wealth and luxury. The ascending pile
Stood fixed her stately height ; and straight the doors
Opening their brazen folds, discover wide
Within, her ample spaces, o'er the smooth
And level pavement : from the arched roof,
Pendent by subtle magic, many a row
Of starry lamps, and blazing cressets, fed
With naphtha and asphaltus, yielded light.

MODERATE.

THE city and republic of Carthage were destroyed by the termination of the third Punic war, about one hundred and fifty years before Christ. The city was in flames during seventeen days ; and the news of its destruction caused the greatest joy at Rome. The Roman senate immediately appointed commissioners, not only to raze the walls of Carthage, but even to demolish and burn the very materials of which they were made ; and, in a few days, that city, which had once been the seat of commerce, the model of magnificence, the common storehouse of the wealth of nations, and one of the most powerful states in the world, left behind no trace of its splendor, of its power, or even of its existence.

The history of Carthage is one of the many proofs that we have of the transient nature of worldly glory : for, of all her grandeur, not a wreck remains. Her own walls, like the calm ocean, that conceals forever the riches hid in its unsearchable abyss, now obscure all her magnificence.

ANIMATED, OR LIVELY.

I HAVE lived to see generals who once had crowds hallooing after them wherever they went, who were bepraised by newspapers and magazines,—those echoes of the voice of the vulgar ; and yet they have long sunk into merited obscurity, with scarce even an epitaph left to flatter. A few years ago, the herring fishery employed all Grub street : it was the topic in every coffee-house, and the burden of every ballad.

We were to drag up oceans of gold from the bottom

of the sea: we were to supply all Europe with herrings, upon our terms. At present, we hear no more of all this. We have fished up very little gold that I can learn; nor do we furnish the world with herrings, as was expected. Let us wait but a few years longer, and we shall find all our expectations a herring-fishery.

GAY, OR QUICK.

AND gaiety on restless tiptoe hovers,
Giggling with all the gallants who beset her;
And there are songs and quavers, roaring, humming,
Guitars, and every other sort of strumming.

And there are dresses, splendid, but fantastical,
Masks of all times and nations, Turks and Jews,
And harlequins and clowns, with feats gymnastical,
Greeks, Romans, Yankee-doodles, and Hindoos.

RAPID, OR QUICKEST.

AWAY!—away!—and on we dash!—
Torrents less rapid and less rash.
Away, away, my steed and I,
Upon the pinions of the wind,
All human dwellings left behind:
We sped like meteors through the sky,
When with its crackling sound the night
Is chequered with the northern light:—
From out the forest prance
A trampling troop—I see them come!
A thousand horse—and none to ride!—
With flowing tail, and flying mane,
Wide nostrils, never stretched by pain,
Mouths bloodless to the bit or rein,
And feet that iron never shod,
And flanks unscarred by spur or rod—
A thousand horse,—the wild, the free—
Like waves that follow o'er the sea,
Came thickly thundering on:—
They stop,—they start—they snuff the air,
Gallop a moment here and there,
Approach, retire, wheel round and round,
Then plunging back with sudden bound—
They snort—they foam—neigh—swerve aside,
And backward to the forest fly,
By instinct, from a human eye.

Exercises in Pauses.

[In the following examples the upright parallels show the length of the pauses and where they should be made.]

ALARM AND FEAR.

AND all went merry as a marriage bell:
But hush! || || hark! || || a deep sound || strikes like a rising knell!

AWE AND TERROR.

MANY ports will exult at the gleam of her mast:
Hush! || hush! || thou vain dreamer! || this hour || || is her last. || ||
Her keel hath struck on a hidden rock; |
And her planks are torn asunder: |
And down come her masts with a reeling shock, |
And a hideous crash|| like thunder!

HORROR.

SLOWLY knee to earth he bent,—his father's hand he took— || ||
What was there in its touch, that all his fiery spirit shook? || ||
That hand was cold! || || a frozen thing:— || || it dropped from his like lead! || ||
He looked up to the face above—|| the face was of the dead: || ||

A plume waved o'er the noble brow— || that brow was fixed and white: || ||
He met, at last, his father's eyes— || || but in them was no sight! || ||
Up from the ground he sprang, and gazed— || || but who could paint that gaze? ||
They hushed their very hearts, || that saw its horror and amaze.

STILLNESS, AND AWE.

CREATION sleeps: || || 't is as the general pulse of life | stood still ||
And nature made a pause, || an awful pause, || !
Prophetic of her end!

SOLEMNITY, AND TRIUMPH.

THE stars | shall fade away, || the sun himself |
Grow dim with age, || and Nature | sink in years;
But thou | shalt flourish in immortal youth, ||
Unhurt | amidst the war of elements, ||
The wreck of matter, || and the crush of worlds.

GRIEF.

FAIREST of creation! || last | and best |
Of all God's works, || creature in whom excelled
Whatever can to sight or thought be formed,
Holy, | divine, | good, | amiable, | or sweet! ||
How art thou lost, || || how on a sudden lost, ||
Defaced, || deflowered, || and how to death | devote!

HORROR.

SO completely did these masters in their art, Hyder Ali, and his more ferocious son, absolve themselves of their impious vow, that when the British armies traversed, as they did, the Carnatic, for hundred of miles, in all directions,—

through the whole line of their march, | they did not see one man, | not one woman || not one child, || || not one four-footed beast || of any description whatever. One | dead | uniform | silence || reigned | over the whole region.

ORATORICAL INTERROGATION.

WHO'S here so base that would be a bondsman? — || If any, speak; for him have I offended. || || Who's here so rude, that would not be a Roman? — || If any, speak; || for him have I offended. || || Who's here so vile, that will not love his country? — || If any, speak; || for him have I offended. — || || I pause for a reply.

Exercises in Emphasis.

FIERCE ANGER AND DEFIANCE.

CALL me their *traitor!*—Thou *injurious* tribune!

Within thine eyes sat *twenty thousand deaths*,
In thine hands clutched as many MILLIONS, in
Thy longing tongue BOTH numbers, I would say,
Thou *LIEST*, unto thee, with a voice as free
As I do pray the gods.

ANGER AND THREATENING.

YOU souls of *geese*,
That bear the *shapes* of men, how have you run
From *slaves* that *apes* would beat!—PLUTO and HELL!
All hurt *behind; backs red*, and *faces pale*
With *flight* and *agued fear!*—MEND, and CHARGE HOME,
Or by the *fires* of *heaven*, I'll *leave* the FOE,
And make my wars on YOU: *look to't:* COME ON!

DEFIANCE.

WHAT in the world he is,
That names me *traitor*, villian-like he LIES:
Call by thy trumpet: he that dares approach,
On *him*, on YOU,—WHO NOT?—I will maintain
My *truth* and *honor firmly*.

EMPHATIC PHRASES.

UPON the *whole*, I will beg leave to tell the House in a *few words* what is *really my opinion*. It is, that the Stamp Act ought to be *repealed* — ABSOLUTELY — TOTALLY — and IMMEDIATELY.

2. And were I an *American*, as I am an *Englishman*, while a *single foreign troop remained* in my *country*, I would *never* lay down my arms—NEVER—NEVER—NEVER.

COMPARISON AND CONTRAST.

IN *Homer*, we discern all the Greek *vivacity;* in *Virgil*, all the Roman *stateliness*. *Homer's* imagination is by much the more rich and *copious; Virgil's* the more *chaste* and *correct*. The strength of the *former* lies, in his power of *warming* the *fancy;* that of the *latter*, in his power of *touching* the *heart*. *Homer's* style is more *simple* and *animated; Virgil's* more *elegant* and *uniform*. The *first* has, on many occasions, a *sublimity* to which the *latter* never *attains;* but the *latter*, in return, never *sinks below* a certain degree of *epic dignity*, which cannot so clearly be pronounced of the *former*.

STRONG ANTITHESIS.

GET any man resolve to do right *now*, leaving *then* to do as it can: and if he were to live to the age of Methuselah, he would never do wrong.—But the common error is to resolve to act right *after breakfast, or after dinner, or to-morrow morning, or next time*. But *now*, just *now*, this *once*, we must go on the same as ever.

THE DELSARTE SYSTEM
OF
PHYSICAL CULTURE AND EXPRESSION

EASE and naturalness are among the chief requisites for effective reading and reciting on all occasions. There is a natural way of expressing every thought and emotion. Mind and body should work together in perfect harmony. Delsarte aims to show how this can be done.

To the uninformed, his name stands hazily for some kind of mysticism. The sim- e fact is, that there is no more mysticism nnected with his teachings and philosophy an there is about any philosophy which s to do with mind rather than with matter. It would be impracticable here to give an haustive account of Delsarte's life and ilosophy, even were that possible. The ject will be simply to state such facts as ll enable the young student of the art of pression to understand why "Delsarteism," pularly so-called, exercises the authority does.

In this particular field Delsarte was the eatest teacher of modern times, and the only one who can be said to have attained to a philosophy of expression. He did not leave, nor did he even formulate, a pedagogical method, but he did formulate and leave rules and principles that are fundamental.

Birth and Early History.

François Delsarte was born November 11, 1811, at Solesmes, France. Early orphaned and impoverished, he drifted like many another waif to Paris, where, in the bitter winter of 1821, he lived in a loft with his younger brother. As morning dawned after one awful night, he woke to find he clasped a lifeless body in his arms. Hunger and exposure had proved fatal to the younger child. As François lay weeping on the grave of the brother just buried in the potter's field, a ragpicker, pursuing his calling, was attracted by what appeared to be a bundle of rags. He found the object to be a half-starved child. Moved with compassion, he took the lad to his own miserable abode, and from this squalor the future teacher and philosopher began his career as a ragpicker.

For two years he followed his wretched avocation, but within his soul burned the passion for music, and in his daily wanderings he gratified his passion as best he could,

drinking in the ditties of itinerant vocalists, the playing of military bands, snatches of songs, or instrumental performances that floated truant to his hungry ear.

At twelve, attracted by music in the garden of the Tuileries, he was observed tracing some curious marks in the sand by one of the musical masters of the time—Bambini. At the request of the professor, the boy translated his hieroglyphics into song. To the question as to where he learned them, he replied, "Nobody taught me sir, I found it out myself." Bambini recognized genius. He took the lad to his home and began his education in music. During two years, such was the progress of the boy, that "Bambini became the pupil, Delsarte the teacher."

Poor and Friendless.

Just then came a great misfortune—the death of his kind protector. Fortunately Bambini had secured Delsarte's admission to the Conservatory. Again, poor and friendless, he had to face the world. He was not a favorite at the Conservatory, because he dared to question the methods of the professors, reputed as they were. In after life he proved their methods incorrect and injurious.

In consequence of what they termed his audacity, he was given little opportunity for public singing, and when occasion was afforded, his style and manner were so essentially unlike the methods of the Conservatory, that the public were not prepared for approval. We are told that only two persons of the vast audience comprehended and appreciated, but the opinion of those two overbalanced all the rest—Marie Malebran, the "queen of song," and Adolphe Nourrit, "the king of tenors."

In due time he left the Conservatory. Failing to obtain a position, he was forced to subject himself to the humiliation of asking the directors for a diploma that he might secure a position in a lyric theatre. He was scornfully refused and told that "such genius should have gravitated to its proper sphere without difficulty or without assistance."

Then he sought opportunity to sing at the Opera House, begging the manager for just one chance. When the latter eyed him contemptuously, Delsarte, sensitive and keenly observant, said, "Monsieur, though my clothes are poor my art is genuine."

A Brilliant Triumph.

The manager, tired of his persistence and anxious to be rid of him, ushered him upon the stage between the acts of an opera and roughly addressed him: "Sing, Delsarte! In five minutes the curtain will rise. Show the stuff you are made of, or if you ever appear here again I will have you arrested as a vagrant."

And we are told that the "beggar with the manners of a prince" walked to the piano amid the jeers of the audience, and with tears in his eyes and his heart on his lips, sang. But what singing! "The long pent-up fires of his genius burst forth. The people were electrified; the house rang with bravos. Again and again he was recalled, and every heartstring was made to vibrate in unison with his soulful utterances. He left the threatre the first singer of Paris."

Soon after this, neatly attired and bearing his appointment at the Opera Comique, he made a brief call at the Conservatory to confirm the directors in their judgment that "true genius should find its proper sphere." He gave tangible proof of it in his commission, and smiling, pointedly observed, "Gentlemen, you would not give me a recommendation as a chorister, but the public have awarded me this." This occurred in 1830.

He soon won a European reputation. But his voice, injured by incorrect methods of training and the physical strain of years of hardship, lost its power, and he left the lyric stage at the age of twenty-three. In spite of this, every inducement was given him to appear in tragedy with Rachel at the Theatre Français, the belief prevailing that his vocal difficulties were but temporary.

He believed them incurable, and turned his attenttion to acting, because deeply interested in expression as an art. He determined to search the laws of an art hitherto left to the "caprice of mediocrity or the inspiration of genius." He found little to aid him in the accepted teachings of the time and was left to pursue his investigations according to his own independent methods.

The World His Schoolroom.

The true genius of the man led him to the right fountain—nature, the only fundamental source. He studied life and its natural expression in all its manifestations, in all conditions, and such a course of study took him everywhere—through hospitals, morgues, asylums, prisons, patiently unearthing the sentiments of past genius.

He studied children at their play, weighing humanity everywhere and in every way. He studied years in medical colleges to understand the construction of the human body. He studied a lifetime to formulate its expression, to convey through the body, beautifully and rythmically, the sentiments of the soul. He was a keen observer and a careful thinker and reasoner. After years of observation of the manifestations of the mind through the body, he sought for the underlying philosophy of these manifestations.

All this time he was teaching, and among his pupils were Rachel, Carvalto, Macready, Pasca, Sontag and Barbot. Jenny Lind consulted him. Pere Hyacinth and Pere Lacordaire, of pulpit fame, were also among his pupils.

He became so great a teacher that he won a recognition that would have brought him wealth and a fame more widely understood and recognized, had not death cut short his career. He was offered an annual salary of $20,000 to found a conservatory in the United States. The King of Hanover, recognizing him as an artist, sent him the Guelph Cross. A street in his native town, Solesmes, was named in his honor.

His Own Words.

His last public appearance was in 1865, at the Sorbonne, where the lectures of the Philotechnique Society were given.

It is recorded that during the evening he remarked: "Many persons feel confident they are to hear me recite or sing. Nothing of the sort, gentlemen; I shall not recite and I shall not sing, because I desire less to show you what I can do than to tell you what I know. I count on the novelty—the absolute novelty—of the things I shall teach you. Art is the subject of this conversation. Art is divine in its principle, divine in its essence, divine in its action, divine in its aim. Ah! gentlemen, there are no pleasures more lasting, more noble, and more sacred than those of art.

"Let us glance around us. There is not a pleasure which is not followed by disappointment or satiety; not a joy which does not entail some trouble; not an affection which does not conceal some bitterness, some grief, and often some remorse. Everything is disappointing to man. Everything about him changes and passes away. Everything betrays him. Even his senses, so closely allied to his being and to which

he sacrifices everything, like faithless servants betray him in their turn."

Delsarte married, in 1833, Rosina Adrien, the daughter of the director of the Grand Opera House—a beautiful young girl of only fifteen years, whose talent as a pianist had already won her a first prize at the Conservatory. Seven children were born to them. His son Gustave died prematurely. It is said of him that, although not approaching his father as a dramatist, he had a most marvellous quality of voice, and when you had once heard that voice, which was developed by his father's grand method, you never forgot its sincerity and melancholy. It haunted you and left you longing to hear it again.

Delsarte left Paris with his family in 1870, taking refuge until the close of the war in his native town of Solesmes. Already ill, he was disheartened and crushed by the misfortunes of his country. He worked steadily on, however, his intellect having lost none of its vigor, though his nature had become more or less shadowed. After his voluntary exile he returned to Paris in March, 1871.

"After Delsarte had gathered so abundant a harvest of laurels, fate decreed he had lived long enough. When he reached his sixtieth year he was attacked by hypertrophy of the heart, which left his rich organization in ruins. He was no longer the artist of graceful, supple expression and harmonious movements, no longer the thinker with profound and luminous ideas; but in the midst of this physical and intellectual ruin, the Christian's sentiment retained its strong, sweet energy.

"After lingering for months in a state that was neither life nor death, surrounded by his pious wife and weeping, praying children, he surrendered his soul to God on the 20th of July, 1871."

What Delsarte Taught

DELSARTE was a man of religious feeling, and knew religious books better than other books. He was acquainted with the lore of the priests, to which he was indebted for his philosophy. Tradition affirms that he was much interested in, and studied Swedenborg. This theory is confirmed by the fact that certain fundamental ideas in his philosophy and the expression of them are intrinsically Swedenborgian.

One of the fundamental principles of Delsarte's philosophy is the law of correspondence, which was discovered by Swedenborg, who held that the material world corresponds to the spiritual world and is the manifestation of man's mental being. In other words, that the spiritual world is symbolized in the physical world. Applied to expression, the interpretation of this law is: "Every expression of the face, every posture of the body, corresponds to, or is but an outward expression of, an inner emotion or condition of the mind."

Goldsmith has pithily said that "language was invented to conceal our thoughts," and the truth of this every one knows by personal experience; but there is a revealer that the will is not always strong or alert enough to control. The involuntary gesture reveals the inmost heart of man beyond all concealment or denial.

In the correspondence of the different parts of the body, Delsarte's idea was not that mental and moral atrributes dwell in these parts, but that certain parts best represent, best express, certain attributes. For example, the head in its poise, etc., represents intellect better than any other part of the body; the trunk, affection; the limbs, power. Each part can represent a certain attribute better than it can represent other attributes.

We See It Illustrated.

For proof of the fundamental truth of this principle we need appeal only to our intuition, the highest of all the powers of judgment, exercising it upon the familiar illustration of everyday life and expression. The mother presses her child to her breast in token of affection, not to her head or to her arms. The head is bent in thought. We encircle a friend with the forearm in friendly demonstration, not with the upper arm; with that we push aside. In this short discussion only the merest index to lines of thought can be suggested to the student.

Delsarte held that in gesture or movement of the body, the parts should move in opposition. In proof of the correctness of his theory he appealed, as before, to the intuition, judging by common observation. When walking normally, the right arm goes forward with the left foot. Parallelism offends our idea of fitness and grace. Opposition of movement marks not only beauty but sincerity, according to his ideas, and these things prove themselves by their appeal to our observation.

The workings of this law can be demonstrated and proven through all parts of the body—there is opposition everywhere. It has been claimed by some that Delsarte did not announce this as a law, but close students of his philosophy, for whom there was access to his notes, find sufficient evidence that he so regarded it. Delsarte was too close an observer and too long a student of the manifestations of the human body not to perceive this very evident principle of action.

Fundamentally, underlying the law of opposition, is the law of equilibrium. To maintain equilibrium of parts there must be opposition. Again, another great teacher in support of this law has called our attention to a fact of common observation: "In true acting you will see opposition of movement; in a farce, parallelisms. In the highest Greek art, the law of opposition is fully illustrated and strictly followed; one of the features which distinguishes ideal Greek art from the lower forms is the obedience to this law. In the old Egyptian statues, the arms and legs are always parallel. In the Phidian, the highest period of Greek art, not one instance of disobedience to the law of opposition can be found."

Another law of movement which claims the student's attention is that of

Succession.

"If two parts are used at the *same time*, they move in opposition; but, if moved successively, as to time, they move in the same direction—parallel directions." For example, if a cultivated person hears something when listening, the eye is turned away from the ear; when he turns toward the direction of the sound to examine, the eye is turned first, then the head, then the body.

The uncultivated person turns all at once—has no parts. The uncultivated body moves in the mass, is lumbering, stiff, in one word, awkward. The cultivated body is supple and responsive to mental impulses; in one word, graceful. Thus ease and nat-

uralness always exhibit themselves in persons who have all their powers under control, and have reached the highest point of mental and physical training.

Another law relating to movement involves this idea: "Every gesture takes its value from the point of departure—it is mental, moral, or vital, according to its point of departure."

A gesture of mentality takes its point of departure from the head. A gesture takes its moral value from the chest as a point of departure. The gesture of vitality is from the vital part of the body. If the emotion be anger, and intellectual anger, because of opposition to truth, the finger will come up to the head—"I declare this to be so and so." If the anger involve the sense of right, the point of departure will be the region of the heart. If the offense be physical, the gesture will be low, in the region of the hips. Then there is the law of

Unity of Movement.

No part acts alone. The parts assist one another, and thus in the matter of gesture confirm one another; otherwise, there would be discord and lack of symmetry.

In this line Delsarte did a great deal of pioneer work, and those who have followed his methods have had much work to do properly and thoroughly to insist upon this law of action, obvious as it is.

Should any agent of the body make a gesture which the other parts of the body seem to deny, there is evident mental disagreement and physical awkwardness. The gesture will seem not suitable to the thought, although upon close discrimination the leading agent will be found to be responding correctly.

Many an actor and public reader has been termed untrue and justly termed awkward because of a lack of unity in all the parts taken together.

This is the fundamental law of all grace and beauty in nature. "No part of the body is used without a definite purpose in view, and no part is used more than is absolutely necessary to the end sought."

Awkward People.

This law, as do all these fundamental laws of nature, appeals to our intuition for proof. The awkward, clumsy person moves parts not necessary to the action, indulges in superfluous movements and finds himself in his own way.

Following close in logical sequence and inseparable in action, is the law of *centers*, radically involving the preceding law. "The center seems to impel all the other parts. That which impels the whole body is the center of the chest." Note that the upright, easy, graceful walker seems impelled by the chest. Should the head lead, we have a mincing, weak walk. If the hips lead, there is an appearance of vulgarity. Obedience to this law secures grace.

These laws, as has been indicated, prove themselves, and their collaboration and application in the art of expression show the careful and extensive observation and philosophical generalization of Delsarte's thought and work. These are the laws underlying his philosophy.

As has been said, Delsarte was a great pioneer in his especial field of work—the art of expression. He made valuable discoveries and continued making them so long as he lived. He was profound and progressive in his art. Without Delsarte the evolution of expression would not be where it is to-day.

There are, however, certain limitations which stand in the way of his philosophy as

a working force, and they have been a fruitful source of criticism, both just and unjust, intelligent and ignorant. The endeavor will be briefly to point out these limitations. Once understood, the remedies suggest themselves and the thoughtful student sees all the more clearly how grand and philosophical a foundation this master laid for his art, which needed only time and its concomitant work and progress to develop.

You Must Exercise Your Will.

As a first limitation, Delsarte made no provision in his psychology for the human will. It is needless to state to the intelligent student or teacher that any system of education in any art or science whatsoever that does not provide a method which shall exercise and develop all the mental attributes in their natural order and action, has a most vital and fatal error in it, which will be shown irrevocably in the results produced.

The will is the "chief corner-stone in every sound form of psychology," and to disregard it as a mental force is to ignore that which makes man what he is.

Delsarte rested his psychology upon a trinity. Psychology in its most modern and progressive stages recognizes a fraternity: consciousness or life, affection, will, intellect. Omit one of these and the result cannot but be wrong.

Again, Delsarte made no provision for the relations and responsive action of groups of muscles. By the very law of opposition in the human body, certain groups of muscles act in response to other groups of muscles. The parts of the body are not isolated and independent. There is absolute unity in this most perfect of all architectures.

Because of this non-provision, a system of physical culture based rigidly and absolutely on his principles, could not be a satisfactory system. It would fail to provide for and cultivate one of the most vital necessities of the human body—the interaction of all the muscles. There would be obvious lack of unity and hence lack of grace in a body so cultivated.

And this involves a further omission—he made no provision for reflex action in the human body, which is the secret spring of all natural gesture. It seems incomprehensible that so keen and thoughtful a student as Delsarte should fail to take cognizance of the fact that the muscles react from muscular sense. However, in his time this sixth sense was not recognized and understood as it is to-day.

Spontaneous Action.

Not to understand this, paved the way to slip into another error all the more easily. Delsarte leaves out *spontaneity*. It can be seen, of course, that it is implied in his philosophy, but it is not definitely recognized and provided for. Right here is the vital flaw which justly calls forth the criticism that Delsarte's method implicitly followed disappoints in developing the orator and the actor, in that it makes them mechanical.

His ideas are absolutely correct, proven by common observation, but some of his methods of producing results to conform to them are not only insufficient but erroneous, because of the non-recognition of all the mental and physical forces and their fundamental principles of action.

"Art rests right upon that law of spontaneity." Nature is spontaneous in action, by means of that secret spring of reflex action.

One of the truest of his followers, commenting upon this very point, has put and answered these most pertinent questions: "How did Delsarte learn his various prin-

ciples were true? How did he learn what gestures mean? By watching what people did when excited by their emotions. What did these spring from? From the spontaneity of the mind." Thus all expression should come from an inward impulse, and where mind and body are in perfect harmony the expression will be exactly suited to the thought and emotion—nothing forced about it, nothing mechanical, but rather the free act of a living being in distinction from a mere machine.

Special Training.

It goes without saying, that both the voice and the ability to express thought and feeling must be developed and cultivated. But it is not so quickly and generally recognized that physical culture is a necessary concomitant of education in expression. Be the mind never so well trained, profound and agile in thought, if the body, its medium of manifestation, be uncultivated, muscles stiff or inert, and unable to respond quickly and intelligently to the mental impulses, the result must be awkwardness, weakness, and inaccuracy of gesture.

Cultivate the muscles, rendering the whole physique in every part pliable and quick to respond to the emotions, and there will be naturally the conformity to the laws which Delsarte primarily deduced from nature. That a student may effectively render a selection, it is not necessary that he should carefully and mechanically formulate what emotions are appropriate to the thoughts expressed in it, and then select and learn the gestures appropriate to such states of mind.

Let him work upon the selection, calling upon the imagination until he can live those scenes and have those states of mind described, and the body will respond. The all-wise Creator took care that the body should not wander through the world without a motive power and controller. Nature takes care of these things if mind and body are normal and free to respond.

The formula is simple: "Objects appeal to the mind, the mind acts, the body expresses."

Does this need proof? "Give a dog something he wants; some secret spring will move his eyes and wriggle his tail just right." It will not be necessary to look up the proper rules first and then instruct him to place and move his parts to correspond. Children act naturally, and their actions are spontaneous. They have no rules for expression, yet in the main no expression is more effective. They are natural in all things.

Talking with the Body.

Gesture is the delineation in the air, by the physical agents of the body, of mental conceptions. "The basis of oratory is to get the body to respond to the thought." In every act of the human being we have to recognize the close and subtle relation of body and soul. The mind is the divine in man, the only source of instruction to the body.

"Gesture is in the soul." "Man is a stream whose source is hidden," says the philosopher, Ralph Waldo Emerson; "always our being is descending into us from we know not whence." The human body is given, as shown in its very construction, to be the instrumentality of expression to the soul it incarnates. It has not been limited to one way of expression. It has been richly gifted in this as in other things. One way is gesture.

Gesture was, undoubtedly, man's first and only language. Gesture includes more than the movements of the hands and arms, or

the body as a whole. It necessarily includes all the physical agents, all parts of the body, the most subtle of all being the eye and mouth. In reference to the mouth, this does not mean its action in speech. There is a subtle movement of the mouth accompanying both speech and silence that is most significant.

Culture of the Body

NOW, how can we cultivate this responsive power of the body to enable the body to be a more ready, more transparent medium for the mind? Obviously, the first essential condition is a healthy body, and physical culture aids in effecting this as powerfully as in rendering the muscles elastic. Exercising any groups of muscles impels, physiologically, to the instinctive adjustment of all the muscles to effect unity with the group exercised.

For example, exercise the muscles of the hand, put the hand in a certain attitude; the whole body, if it be in a normal, pliable condition, will feel constrained, uncomfortable, unless it is permitted to adjust itself in an attitude agreeing with that of the hand. If the body be allowed to assume, in all its parts, the corresponding attitude, there is a comfortable muscular feeling. This instinctive feeling in the muscles is muscular sense, and very good common sense it is, too.

To sum up, in a few words, the trend of these statements concerning gesture is only to say to the sincere student, let nature work in her own divine way. Cultivate the mind to comprehend, the body to respond, and your gestures will take care of themselves, as have always the gestures of every God-inspired orator and reader.

Yet, to have some practical instruction, based on the principles already stated, will aid the young student.

Delsarte taught his criteria of gesture of the hand with a cube. Holding the hand out straight, palm up, so that the cube can rest on it, signifies upholding, sustaining. Delsarte adds, "giving," "receiving;" but it will be observed the action of the hand is the same for both. The hand passed to the side gives the position of separation, which Delsarte calls "definition." If the hand be raised to attract attention, the forefinger will be inclined to act, thus separating the person desired from others. The hand passed to the top of the cube covers it, protects; thus held flat, signifies protection; curved, implies something more tender—a caress.

Use of the Hand.

The same gesture is a true one when describing certain actions, as of animals running—they cover so much ground. The term "cover" is considered by one of our own great teachers a more generic term than "protect." The hand passed to the opposite side gives the attitude of rejection, a familiar gesture. The hand passed to the outer end, palm toward the cube, signifies limitation; passed to the end next the person, back of hand to cube, fingers pointing up, signifies revelation. The palm may mean repulsion or attraction, depending on the sentiment.

A person of great responsiveness is apt to use both hands and also both arms. The whole personality is interested. In merely mental activity—reasoning—one hand, one finger will be employed.

"The "perpendicular" movements of the arm are those of appellation, salutation, affirmation. The "lateral" movements are those of declaration, negation, rejection. The "forward" movements are those of repulsion, attraction, supplication.

The altitude of gesture depends somewhat on the position of the object of thought. The hand will move in curves—nature's own lines. All gestures are affected by the altitude which indicates the moral plane. Greater intellectuality gives higher gestures. The more vividly the imagination works, rendering the thought brilliant, the higher the gestures. Tendencies of character will modify the gestures. A great and profound teacher sums up the matter thus: "The rounded, the complete individual is one whose gestures, like the singer's voice, play up and down the scale.

It must be remembered that we have spoken of the gestures of only one agent, the hand. The nobler and subtler gestures are of the face and chest. The eye has a language of its own; it is a wonderful agent of expression. Look your thought; speak it with your eyes. All the features of your face were made to talk. Let your face speak all emotions—surprise, joy, fear, hope, expectancy, anguish, in short, every mood of the inner being. Feel the emotions; make them your own, and then express them naturally.

Exercises for the Body.

1. With body erect and hands at sides, move the head to right and left, and forward and backward; cultivates the muscles of the neck.

2. With hands on the hips, move the upper part of the body to right and left, and forward and backward; this cultivates the muscles of the chest and back.

3. Close the hands, extend the arms in front, and bring the hands together behind the back; repeat at least twenty times.

4. Stand erect, with arms straight at the sides; move the arms outward from the sides, and elevate them, bringing the hands above the head; repeat at least twenty times.

5. Hold the right arm out horizontally, palm of hand upward; double the left arm, the tips of the fingers resting on the shoulder; then stretch out the left arm, at the same time doubling the right arm and placing the tips of the fingers on the right shoulder; repeat, and then make the movements with both arms simultaneously.

Hands and Arms.

6. Holding the arms straight, swing them with a rotary motion, thrusting them forward as they are elevated and backward as they are lowered, bringing them to the sides, and then repeat.

7. Lift the hands from the sides to the shoulders, then raise the arms at full length above the head, and also extend them horizontally, dropping them at the sides; repeat.

8. Standing erect, with the hands on the hips, lower the body, bending the knees, the weight resting on the toes, and rise; repeat at least fifteen times, but not too fast.

9. Placing the hands on the hips, right leg forward and left leg slightly bent; thrust the body forward, thus straightening the left leg and bending the right; then placing the left leg forward, repeat movements.

10. With the body bent forward, closed hands between the knees, raise the body and elevate the hands above the head, taking care to keep the arms straight; repeat.

11. Place the hands on the front side of the hips, bend the body forward, and then rise to an erect position, at the same time throwing the head backward; repeat.

12. Steady yourself with one hand on a chair; place the other hand on the hip and swing the leg forward across the other; then backward; repeat, and then swing the other leg in like manner.

13. Steady yourself with one hand on a chair, place the other hand on the hip, and swing the leg forward and backward; repeat, and then swing the other leg in like manner.

Free Gymnastics.

14. Stretch the body forward, placing the hands on the bottom of a chair; then straighten the arms and raise the body. This must not be repeated so many times as to render the muscles sore and stiff.

15. Extend the arms forward at full length, palms downward; then move the hands backward and forward as far as possible; this renders the fingers and muscles of the wrist pliant.

16. Stand erect with hands on the hips and light weight on the head; then rise on the toes and fall.

17. Extend the arms slightly from the sides, close the hands and then rotate them; this cultivates the muscles of the arms.

18. With body erect and hands on the hips, fill the lungs to their utmost capacity; then slowly emit the breath. Fill the lungs again, and emit more rapidly; again, and emit with a quick, explosive force.

The parts primarily and directly concerned in the production of the human voice in speech and song are the articulating organs and chambers of resonance, the vocal cords, the lungs, and the muscles of respiration. We cannot, however, separate the voice from any of the vital parts.

The prime physical aid to the cultivation of the voice is a healthy body. All the vocal organs should respond quickly and easily to mind and will, to the thought and emotion, and the mental effort employed in expressing them.

The reader must always remember that his work is distinctly and wholly for others. Keep ever in mind that you read your selection to please, to instruct, to inspire your fellow-beings, and not to exhibit yourself and your powers; then there will be no danger of self-consciousness.

Then be thoroughly and entirely alive. No perfection of manner can atone for lack of life. Again, although there is no human device by which to measure it, time is necessary for the transmission of thought. It takes time for your voice to reach the physical ear of the listener, then time for the thought to reach his consciousness and produce its effect. Give time for the thought to implant itself. In addition to this, there is no more suggestive emphasis than a pause.

You Must Think on Your Feet.

Take care not to do all your thinking beforehand; cultivate the power to think on your feet, at the time you are speaking, otherwise your reading will indeed be a recitation—a mere mechanical recapitulation of past thinking—and it will lack the fire of the soul's present action, which alone touches and inflames the hearts of others. A selection just committed, on the other hand, without having had time to be well-grounded and analyzed, will be given in a mass—all alike.

Talk with your audience, not at them or over their heads. Cultivate a conversational style. It has been said of one of the greatest of our orators—Wendell Phillips—that his oratory was that of "a gentleman talking."

Remember, the greatest thing you bring to an audience is your own personality. Would you succeed in your art, cultivate all that goes to make up the great artist—body, heart and soul.

How to Remember

The Loisette Memory System

WHATEVER will aid the memory, render it more quick and retentive, enable it to lay hold of facts, figures and circumstances, and store them away, only to be instantly brought forth when required, cannot fail to be of great value to every individual. So much has been said about Loisette's memory system, the art has been so widely advertised, and so carefully guarded from all the profane who do not send five or many dollars to the professor, that a few pages showing how every man may be his own Loisette may be both interesting and valuable.

In the first place, the system is a good one, and well worth the labor of mastering, and if the directions are implicitly followed there can no doubt that the memory will be greatly strengthened and improved, and that mnemonic feats otherwise impossible may be easily performed.

Loisette, however, is not an inventor, but an introducer. He stands in the same relation to Dr. Pick that the retail dealer holds to the manufacturer: the one produced the article; the other brings it to the public. Even this statement is not quite fair to Loisette, for he has brought much practical common sense to bear upon Pick's system, and, in preparing the new art of mnemonics for the market, in many ways he has made it his own. New and valuable rules and suggestions have been added.

If each man would reflect upon the method by which he himself remembers things, he would find his hand upon the key of the whole mystery. For instance, the author was once trying to remember the word *blythe*. There occurred to my mind the words "bellman," "belle," and then the verse:

> "———the peasant upward climbing
> Hears the bells of *Buloss* chiming,"

"Barcarole," "barrack," and so on until finally the word "blythe" presented itself with a strange insistence, long after I had ceased trying to recall it.

On another occasion, when trying to recall the name "Richardson," I got the words "hayrick," "Robertson," "Randallstown," and finally "wealthy," from which, naturally, I got "rich" and "Richardson" almost in a breath.

Still another example: trying to recall the name of an old schoolmate, "Grady," I got "Brady," "grave," "gaseous," "gastronome," "gracious," and I finally abandoned the attempt, simply saying to myself that it began with a "G," and there was an "a" sound after it. The next morning, when thinking of something entirely different, the name "Grady" came up in my mind with as much distinctness as though some one had whispered it in my ear.

Words of Similar Sounds.

This remembering was done without any conscious effort on my part, and was evidently the result of the exertion made the day before when the mnemonic processes were put to work. Every reader must have had a similar experience which he can recall, and which will fall in line with the examples given.

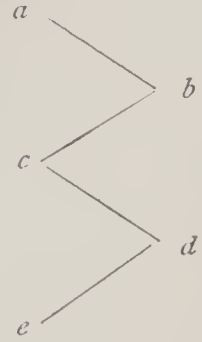
It follows, then, that when we endeavor, without the aid of any system, to recall a forgotten fact or name, our memory presents to us words of similar sound or meaning in its journey toward the goal to which we have started it. This goes to show that our ideas are arranged in groups in whatever secret cavity or recess of the brain they occupy, and that the arrangement is one not alphabetical exactly, and not entirely by meaning, but after some fashion partaking of both.

If you are looking for the word "meadow," you may reach "middle" before you come to it, or "Mexico," or many words beginning with the "m" sound, or containing the "dow," as "window" or "dough," or you may get "field" or "farm"—but you are on the right track, and if you do not interfere with your intellectual process you will finally come to the idea which you are seeking.

How often have you heard people say, "I forget his name; it is something like Beadle or Beagle—at any rate it begins with a B." Each and all of these were unconscious Loisettians, and they were practicing blindly, and without proper method or direction, the excellent system which he teaches. The thing, then, to do—and it is the final and simple truth which Loisette teaches—is to travel over this ground in the other direction—to cement the fact you wish to remember to some other fact or word which you know will be brought out by the implied conditions—and thus you will always be able to travel from your given starting-point to the thing which you wish to call to mind.

How the Mind Works.

To illustrate: let the broken line in the annexed diagram represent a train of thought. If we connect the idea "*a*" with "*e*" through the steps *b*, *c* and *d*, the tendency of the mind ever afterwards will be to get to *c* from *a* that way, or from any of the intermediates that way. It seems as though a channel were cut in our mind-stuff along which the memory flows. How to make it flow this way will be seen later on. Loisette, in common with all mnemonic teachers, uses the old device of representing numbers by letters—and as this is the first and easiest step in the art, this seems to be the most logical place to introduce the accepted equivalents of the Arabic numerals.



0 is always represented by *s*, *z* or *c* soft.
1 is always represented by *t*, *th* or *d*.
2 is always represented by *n*.
3 is always represented by *m*.
4 is always represented by *r*.
5 is always represented by *l*.
6 is always represented by *sh*, *j*, *ch* soft or *g* soft.
7 is always represented by *g* hard, *k*, *c* hard, *q* or final *ng*.
8 is always represented by *f* or *v*.
9 is always represented by *p* or *b*.

All the other letters are simply to fill up. Double letters in a word count only as one. In fact, the system goes by sound, not by spelling—for instance, "this" or "dizzy" would stand for *ten;* "catch" or "gush" would stand for 76, and the only difficulty is to make some word or phrase which will contain only the significant letters in the proper order, filled out with non-significants in some guise of meaning or intelligibility. You can remember the equivalents by noting the fact that *z* is the first letter of "zero," and *c* of "cipher," *t* has but one stroke, *n* has two, *m* three. The script *f* is very like 8, the script *p* like 9; *r* is the last letter of *four*, *l* is the Roman numeral for fifty, which suggests *five*. The others may be retained by memorizing these two nonsense lines:

Six *sh*y *J*ewesses *ch*ase *G*eorge.
Seven *g*reat *k*ings came *q*uarreling.

Suppose you wished to get some phrase or word that would express the number 3,685, you arrange the letters this way:

	3	⌒	6	⌒	8	⌒	5
a e i o u h w x y	m	a e i o u h w x y	sh j ch g	a e i o u h w x y	f v	a e i o u h w x y	l

You can make out "image of law," "my shuffle," "matchville," etc., etc., as far as you like to work it out.

Now, suppose that you wished to memorize the fact that $1,000,000 in gold weighs 3,685 pounds, you go about it in this way, and here is the kernel and crux of Loisette's system:

"How much does $1,000,000 in gold weigh?"

"Weigh—scales."

"Scales—statue of Justice."

"Statue of Justice—*image of law.*"

The process is simplicity itself. The thing you wish to recall, and that you fear to forget, is the weight; consequently you cement your chain of suggestion to the idea which is most prominent in your mental question. What do you weigh with? Scales. What does the mental picture of scales suggest? The statue of Justice, blindfolded and weighing out award and punishment to man. Finally, what is the statue of Justice but the image of law? and the words "image of law," translated back from the significant letters *m*, *g* soft, *f* and *l*, give you 3–6–8–5, the number of pounds in $1,000,000 in gold. The process is plain and simple.

Firmly Fixed.

You bind together in your mind each separate step in the journey, the one suggests the other, and you will find a year from now that the fact will be as fresh in your memory as it is to-day. You cannot lose it. It is chained to you by an unbreakable mnemonic tie. Mark, that it is not claimed that "weight" will of itself suggest "scales," and "scales," "statue of Justice," etc., but that, having once passed your attention up and down that ladder of ideas, your mental tendency will be to take the same route, and get to the same goal again and again. Indeed, beginning with the weight of $1,000,000, "image of law" will turn up in your mind without your consciousness of any intermediate station on the way, after some iteration and reiteration of the original chain.

Again, so as to fasten the process in the reader's mind even more firmly, suppose that it were desired to fix the date of the battle

of Hastings (A. D. 1066) in the memory; 1066 may be represented by the words "the wise judge" ($th = 1$, $s = 0$, $j = 6$, $dg = 6$; the others are non-significants); a chain might be made thus:

Battle of Hastings—arbitrament of war.

Arbitrament of war—arbitration.

Arbitration—judgment.

Judgment—the wise judge.

Make mental pictures, connect ideas, repeat words and sounds, go about it any way you please, so that you will form a mental habit of connecting the "battle of Hastings" with the idea of "arbitrament of war," and so on for the other links in the chain, and the work is done.

One Idea Suggests Another.

Loisette makes the beginning of his system unnecessarily difficult, to say nothing of his illogical arrangement in the grammar of the art of memory, which he makes the first of his lessons. He analyzes suggestion into—

1. Inclusion.
2. Exclusion.
3. Concurrence.

All of which looks scientific and orderly, but is really misleading, and badly named. The truth is that one idea will suggest another:

1. By likeness or opposition of meaning, as "house" suggests "room" or "door," etc.; or, "white" suggests "black;" "cruel," "kind," etc.

2. By likeness of sound, as "harrow" and "barrow;" "Henry" and "Hennepin."

3. By mental juxtaposition, a peculiarity different in each person, and depending upon each one's own experience. Thus, "St. Charles" suggests "railway bridge" to me, because I was vividly impressed by the breaking of the Wabash bridge at that point. "Stable" and "broken leg" come near each other in my experience, so do "cow" and "shot-gun" and "licking."

Out of these three sorts of suggestions, it is possible to get from any one fact to any other in a chain certain and safe, along which the mind may be depended upon afterwards always to follow.

Necessity of Attention.

The chain is, of course, by no means all. Its making and its binding must be accompanied by a vivid, methodically directed attention, which turns all the mental light gettable in a focus upon the subject passing across the mind's screen. Before Loisette was thought of this was known. In the old times in England, in order to impress upon the mind of the rising generation the parish boundaries in the rural districts, the boys were taken to each of the landmarks in succession, the position and bearing of each pointed out carefully, and, in order to deepen the impression, the young people were then and there vigorously thrashed, a mechanical method of attracting attention, which was said never to have failed.

This system has had its supporters in many of the old-fashioned schools, and there are men who will read these lines who can recall with an itching sense of vivid expression the 144 lickings which were said to go with the multiplication table.

In default of a thrashing, however, the student must cultivate as best he can an intense fixity of perception upon every fact or word or date that he wishes to make permanently his own. It is easy. It is a matter of habit. If you will you can photograph an idea upon your cerebral gelatine so that neither years nor events will blot it out or overlay it.

You must be clearly and distinctly aware

of the thing you are putting into your mental treasure-house, and drastically certain of the cord by which you have tied it to some other thing of which you are sure. Unless it is worth your while to do this, you might as well abandon any hope of mnemonic improvement, which will not come without the hardest kind of hard work, although it is work that will grow constantly easier with practice and reiteration.

You need, then :

1. Methodic suggestion.
2. Methodic attention.
3. Methodic reiteration.

And this is all there is to Loisette, and a great deal it is. Two of them will not do without the third. You do not know how many steps there are from your hall-door to your bed-room, although you have attended to and often reiterated the journey. But if there are twenty of them, and you have once bound the word "nice," or "nose," or "news," or "hyenas," to the fact of the stairway, you could never forget it.

The Mental Discipline.

The Professor makes a point, and very wisely, of the importance of working through some established chain, so that the whole may be carried away in the mind—not alone for the value of the facts so bound together, but for the mental discipline so afforded.

Here, then, is the "President Series," which contains the name and date of inauguration of each president from Washington to Cleveland. The manner in which it is to be mastered is this : Beginning at the top, try to find in your mind some connection between each word and the one following it. See how you can, at some future time, make one suggest the next, either by suggestion of sound or sense, or by mental juxtaposition. When you have found this, dwell on it attentively for a moment or two. Pass it backward and forward before you, and then go on to the next step.

The chain runs thus, the names of the presidents being in small caps, the date words in italics :

President.....Chosen as the first word as the one most apt to occur to the mind of any one wishing to repeat the names of the presidents.
Dentist.....Presi*dent* and *dent*ist.
Draw.....What does a dentist do?
To give up.....When something is drawn from one it is given up. This is a date phrase meaning 1789.
Self-sacrifice.....There is an association of thought between giving up and self-sacrifice.
WASHINGTON .....Associate the quality of self-sacrifice with Washington's character.
Morning wash.....*Wash*ington and *wash*.
Dew.....Early wetness and dew.
Flower beds.....Dew and flowers.
Took a bouquet.....Flowers and bouquet. Date phrase (1797).
Garden.....Bouquet and garden.
Eden.....The first garden.
Adam.....Juxtaposition of thought.
ADAMS.....Suggestion by sound.
Fall.....Juxtaposition of thought.
Failure.....Fall and failure.
Deficit.....Upon a failure there is usually a deficit. Date word (1801).
Debt.....The consequence of a deficit.
Bonds.....Debt and bonds.
Confederate bonds.Suggestion by meaning.
Jefferson Davis.....Juxtaposition of thought.
JEFFERSON.

Now follow out the rest for yourself, taking about ten at a time, and binding those you do last to those you have done before, each time, before attacking the next bunch.

1	2	3
JEFFERSON	*tough make*	*Theophilus*
Judge Jeffreys	oaken furniture	fill us
bloody assize	bureau	FILLMORE
bereavement	VAN BUREN	more fuel
too heavy a sob	rent	*the flame*

parental grief
mad son
MADISON
Madeira
first-rate wine
frustrating
defeating
feet
toe the line
row
MONROE
row
boat
steamer
the funnel
windpipe
throat
quinzy
QUINCY ADAMS
quince
fine fruit
the fine boy
sailor boy
sailor
jack tar
JACKSON
stone wall
indomitable
thievish boy
take
give
GRANT
award
school premium
examination
cramming
fagging
laborer
hay field
HAYES

side-splitting
divert
annoy
harassing
HARRISON
Old Harry
the tempter
the fraud
painted clay
baked clay
tiles
TYLER
Wat Tyler
poll tax
compulsory
free will
free offering
burnt offering
poker
POLK
end of dance
termination 'ly'
adverb
part of speech
part of a man
TAYLOR
measurer
theodolite
hazy
clear
vivid
brightly lighted
camp fire
war field
GARFIELD
Guiteau
murderer
prisoner
prison fare
half fed

flambeau
bow
arrow
PIERCE
hurt
feeling
wound
soldier
cannon
BUCHANAN
rebuke
official censure
to officiate
wedding
linked
LINCOLN
link
stroll
sea shore
the heavy shell
mollusk
unfamiliar word
dictionary
Johnson's
JOHNSON
son
bad son
dishonest boy
well fed
well read
author
ARTHUR
round table
tea table
tea cup
half full
divide
cleave
CLEVELAND

It will be noted that some of the date words, as "free will," only give three figures of the date, 845; but it is to be supposed that if the student knows that many figures in the date of Polk's inauguration he can guess the other one.

The curious thing about this system will now become apparent. If the reader has learned the series so that he can say it down from President to Cleveland, he can with no effort, and without any further preparation, say it *backward* from Cleveland up to the commencement! There could be no better proof that this is the natural mnemonic system. It proves itself by its works.

The series should be repeated backwards and forwards every day for a month, and should be supplemented by a series of the reader's own making, and by this one, which gives the numbers from 0 to 100, and which must be chained together before they can be learned:

0—hoes

1 wheat	34 mare	67 jockey
2 hen	35 mill	68 shave
3 home	36 image	69 ship
4 hair	37 mug	70 eggs
5 oil	38 muff	71 gate
6 shoe	39 mob	72 gun
7 hook	40 race	73 comb
8 off	41 hart	74 hawker
9 bee	42 horn	75 coal
10 daisy	43 army	76 cage
11 tooth	44 warrior	77 cake
12 dine	45 royal	78 coffee
13 time	46 arch	79 cube
14 tower	47 rock	80 vase
15 dell	48 wharf	81 feet
16 ditch	49 rope	82 vein
17 duck	50 wheels	83 fame
18 dove	51 lad	84 fire
19 tabby	52 lion	85 vial
20 hyenas	53 lamb	86 fish
21 hand	54 lair	87 fig
22 nun	55 lily	88 fife
23 name	56 lodge	89 fib
24 owner	57 lake	90 pies
25 nail	58 leaf	91 putty
26 hinge	59 elbow	92 pane
27 ink	60 chess	93 bomb
28 knife	61 cheat	94 bier
29 knob	62 chain	95 bell
30 muse	63 sham	96 peach
31 mayday	64 chair	97 book
32 hymen	65 jail	98 beef
33 mama	66 judge	99 pope

100—diocese

By the use of this table, which should be committed as thoroughly as the President series, so that it can be repeated backwards and forwards, any date, figure or number can be at once constructed, and bound by

the usual chain to the fact which you wish it to accompany.

When the student wishes to go farther and attack larger problems than the simple binding of two facts together, there is little in Loisette's system that is new, although there is much that is good. If it is a book that is to be learned as one would prepare for an examination, each chapter is to be considered separately.

Make a Synopsis.

Of each a *precis* is to be written in which the writer must exercise all his ingenuity to reduce the matter in hand to its final skeleton of fact. This he is to commit to memory, both by the use of the chain and the old system of interrogation. Suppose after much labor through a wide space one boils a chapter or an event down to the final irreducible sediment: "Magna Charta was exacted by the barons from King John at Runnymede."

You must now turn this statement this way and that way, asking yourself about it every possible and impossible question, gravely considering the answers, and, if you find any part of it especially difficult to remember, chaining it to the question which will bring it out. Thus, "What was exacted by the barons from King John at Runnymede?" "Magna Charta." "By whom was Magna Charta exacted from King John at Runnymede?" "By the barons." "From whom was," etc., etc.? "King John." "From what king," etc., etc.? "King John." "Where was Magna Charta," etc., etc.? "At Runnymede."

And so on and so on, as long as your ingenuity can suggest questions to ask, or points of view from which to consider the statement. Your mind will be finally saturated with the information, and prepared to spill it out at the first squeeze of the examiner. This, however, is not new. It was taught in the schools hundreds of years before Loisette was born. Old newspaper men will recall in connection with it Horace Greeley's statement that the test of a news item was the clear and satisfactory manner in which a report answered the interrogatories, "What?" "When?" "Where?" "Who?" "Why?"

In the same way Loisette advises the learning of poetry. For example:

"The Assyrian came down like a wolf on the fold."

"Who came down?"

"How did the Assyrian come down?"

"Like what animal did?" etc.

And so on and so on, until the verses are exhausted of every scrap of information to be had out of them by the most assiduous cross-examination.

Remembering Figures.

Whatever the reader may think of the availability or value of this part of the system, there are so many easily applicable tests of the worth of much that Loisette has done, that it may be taken with the rest.

Few people, to give an easy example, can remember the ratio between the circumference and the diameter of the circle—beyond four places of decimals, or at most six—3.141592+. Here is the value to 108 decimal places:

3.14159265·3589793238·4626433832·795
0288419·7169399375·1058209749·445
9230781·6406286208·998620348·2534
211706·7982148086+

By a very simple application of the numerical values these 108 decimal places can be carried in the mind and recalled about as fast

as you can write them down. All that is to be done is to memorize these nonsense lines:

Mother Day will buy any shawl.
My love pick up my new muff.
A Russian jeer may move a woman.
Cables enough for Utopia.
Get a cheap ham pie by my cooley.
The slave knows a bigger ape.
I rarely hop on my sick foot.
Cheer a sage in a fashion safe.
A baby fish now views my wharf.
Annually Mary Ann did kiss a jay.
A cabby found a rough savage.

Now translate each significant into its proper value and you have the task accomplished. "Mother Day," $m = 3$, $th = 1$, $r = 4$, $d = 1$, and so on. Learn the lines one at a time by the method of interrogatories. "Who will buy any shawl?" "Which Mrs. Day will buy a shawl?" "Is Mother Day particular about the sort of shawl she will buy?" "Has she bought a shawl?" etc., etc. Then cement the end of each line to the beginning of the next one thus, "Shawl"—"warm garment"—"warmth"—"love"—"my love," and go on as before. Stupid as the work may seem to you, you can memorize the figures in fifteen minutes in this way so that you will not forget them in fifteen years. Similarly you can take Haydn's Dictionary of Dates, and turn fact after fact into nonsense lines like these which you cannot lose.

And this ought to be enough to show anybody the whole art. If you look back across the sands of time and find out that it is that ridiculous old "Thirty days hath September" which comes to you when you are trying to think of the length of October—if you can quote your old prosody,

"O datur ambiguis," etc.,

with much more certainty than you can serve up your Horace; if, in fine, jingles and alliterations, wise and otherwise, have stayed with you, while solid and serviceable information has faded away, you may be certain that here is the key to the enigma of memory.

You can apply it to yourself in a hundred ways. If you wish to clinch in your mind the fact that Mr. Love lives at 485 Dearborn Street, what is more easy than to turn 485 into the word "rifle" and chain the ideas together, say thus: "Love—happiness—good—time picnic—forest—wood rangers—range—rifle range—*rifle*—fine weapon—costly weapon—dearly bought—DEARBORN."

Or, if you wish to remember Mr. Bowman's name, and you notice he has a mole on his face which is apt to attract your attention when you next see him, cement the ideas thus: "Mole, mark, target, archer, Bowman."

SYNONYMS AND ANTONYMS

FOR the purpose of avoiding too much repetition in writing and speaking it is necessary to have a Dictionary of words of similar meaning. A Synonym is one of two or more words of similar significance which may often be used interchangeably. An Antonym is a word of opposite meaning. In the following list the Synonyms are first given; then follow, in parenthesis, the Antonyms, or words of opposite meaning.

All persons who would acquire an elegant style in literary composition, correspondence or ordinary conversation, will find this comprehensive Dictionary of Synonyms and Antonyms of great value. Jewels of thought should be set in appropriate language.

In this Table the letter *a* means adjective; *v* means verb; *n* means noun or substantive.

ABANDON—forsake, desert, renounce, relinquish. (Keep, cherish.)

ABANDONED — deserted, forsaken, profligate, wicked, reprobate, dissolute, flagitious, corrupt, depraved, vicious. (Respected, esteemed, cherished, virtuous.)

ABASEMENT—degradation, fall, degeneracy, humiliation, abjectness, debasement, servility. (Elevation, promotion, honor.)

ABASH—disconcert, discompose, confound, confuse, shame, bewilder. (Embolden.)

ABBREVIATE—shorten, curtail, contract, abridge, condense, reduce, compress. (Lengthen, extend, enlarge, expand.)

ABDICATE—renounce, resign, relinquish. (Usurp.)

ABET—incite, stimulate, whet, encourage, back up, second, countenance, assist. (Dampen, discourage, dispirit, depress, repress, oppose.)

ABETTOR—instigator, prompter, assistant, coadjutor, accomplice, accessory, *particeps criminis*. (Extinguisher.)

ABHOR—loathe, abominate, (Love, admire.)

ABILITY—power, skill, gumption, efficiency, mastery, qualification, faculty, expertness. (Incompetence, inefficiency, inability.)

ABJECT—despised, despicable, vile, grovelling, mean, base, worthless, servile. (Supreme, august, commanding, noble.)

ABJURE—forswear, disclaim, unsay, recant, revoke, deny, disown. (Attest, affirm.)

ABLE—competent, qualified, skilled, efficient, capable, clever, adroit, adept, strong, telling, masterly. (Incompetent, weak, unskilful, unqualified.)

ABODE—dwelling, residence, domicile, home, quarters, habitation, lodging, settlement. (Transition, shifting, wandering, pilgrimage, peregrination.)

ABOLISH—efface, extinguish, annihilate, nullify, destroy, undo, quash, annul, cancel, abrogate, quench, suppress, vitiate, revoke. (Introduce, establish, enforce, restore.)

ABOMINABLE—detestable, hateful, odious, execrable. (Choice, excellent, attractive, select.)

ABORTIVE—ineffectual, futile, inoperative, defective, inadequate. (Efficient, productive, complete.)

ABOUT—around, near to, nearly, approximately, contiguous. (Remote from, distant.)

ABSCOND—take oneself off, "vamoose," disappear, decamp, run away. (Thrust oneself into notice.)

ABSENT—not present, wanting, absentminded, abstracted, inattentive, listless, dreamy, visionary. (Present, collected, composed, vigilant, observant.)

ABSOLUTE—certain, unconditioned, unconditional, unlimited, unrestricted, transcendent, authoritative, paramount, imperative, arbitrary, despotic. (Conditional, limited, hampered, fettered.)

ABSORB—suck up, imbibe, engross, drain away, consume. (Reserve, save, spare, husband, economize, hoard up.)

ABSURD—unreasonable, nonsensical, foolish, vain, impracticable. (Reasonable, prudent, veracious.)

ABUSE, *v.*—pervert, deprave, traduce, debase, disparage, slander, calumniate, rail at, reproach, depreciate. (Improve, develop, cultivate, promote, bless, magnify, appreciate.)

ABUSE, *n.*—perversion, ill-usage, depravation, debasement, slander, reproach. (Cultivation, use, promotion, development, appreciation, praise.)

ACCEDE—join, assent, acquiesce in, comply, agree, concur, coincide, approve. (Dissent, object, decline, refuse.)

ACCELERATE—hasten, hurry, speed, expedite, quicken, precipitate, facilitate. (Retard, delay, procrastinate, arrest, stop, impede, suspend.)

ACCEPT—take, receive, assume, acknowledge, endorse. (Refuse, repudiate, protest, disown.)

ACCEPTABLE—pleasant, grateful, welcome. (Repugnant, displeasing.)

ACCIDENT—casualty, contingency, hap, mishap, chance, mischance, misadventure. (Law, order.)

ACCOMMODATE—adjust, adapt, fit, conform, reconcile, suit, oblige, furnish, convenience. (Cross, thwart, counteract, plot against, checkmate, defeat, inconvenience.)

ACCOMPLICE—confederate, ally, associate, accessory, *particeps criminis*. (Adversary, rival, spy, opponent, enemy.)

ACCOMPLISH—complete, perform, finish, fulfil, execute, perfect, consummate, achieve, effect, carry out. (Fail, miscarry, undo, wreck, frustrate.)

ACCOMPLISHMENT—success, fulfilment, completion, performance, execution, achievement, consummation, attainment. (Failure, miscarriage, wreck, ruin.)

ACCORD—harmonize, agree, allow, grant, concede. (Jar, clash with, deny, disallow.)

ACCOST—address, confront, speak to, greet, salute. (Evade, fight shy of.)

ACCOUNT, *v.*—compute, estimate, reckon up, take stock of. (Leave unexplained, unsolved.)

ACCOUNT, *n.*—reckoning, relation, charge, bill. (Riddle, mystery, puzzle, unknown quantity.)

ACCOUNTABLE—answerable, responsible, amenable. (Exempt, free, irresponsible.)

ACCUMULATE—heap up, save, collect. (Scatter, dissipate, diffuse, spend, squander.)

ACCUMULATION—heap, amount, glut, (Dissipation, dissemination, distribution, diminution.)

ACCURATE—definite, precise, correct, exact. (Inaccurate, wrong, erroneous, blundering, careless.)

ACHIEVE—complete, gain, win.

ACHIEVEMENT—feat, exploit, distinguished performance, acquirement. (Abortion, frustration, failure, shortcoming, defect.)

ACKNOWLEDGE—avow, confess, own, recognize, admit, grant, concede. (Repudiate, disclaim, disallow, disown, deny.

ACQUAINT—make known, apprise, inform, communicate, intimate, notify. (Leave ignorant, keep secret, conceal.)

ACQUAINTANCE—knowledge, familiarity, fellowship, companionship. (Ignorance, stranger.)

ACQUIESCE—yield, concur, agree, assent. (Protest, object, dissent, secede, oppose.)

ACQUIT—set free, release, discharge, clear, absolve, exculpate, exonerate, liberate, deliver. (Accuse, impeach, charge, blame, convict.)

ACT, *v.*—do, perform, commit, operate, work, practice, behave, personate, play, enact. (Neglect, cease, desist, rest, wait, lie idle, refrain.)

ACTION—working, agency, operation, business, gesture, engagement, fight, deed, battle, feat. (Inaction, repose, rest, idleness, ease, indolence, inertia, passiveness, quiescence, dormancy.)

ACTIVE—energetic, busy, stirring, alive, brisk, operative, lively, agile, nimble, diligent, sprightly, alert, quick, supple, prompt, industrious. (Passive, inert, dead, extinct, dull, torpid, sluggish, indolent, lazy, dormant, quiescent, asleep.)

ACTUAL—real, positive, existing, certain. (False, imaginary, theoretical, illusive, fictitious.)

ACUTE—sharp, pointed, penetrating, piercing, keen, poignant, pungent, intense, violent, shrill, sensitive, sharp-witted, shrewd, discriminating, clever, cunning. (Obtuse, blunt, bluff, dull, flat, callous, stupid, apathetic.)

ADAPT—fit, suit, adjust, conform, regulate. (Misfit, discommode, dislocate.)

ADDICTED—committed to, devoted, prone, given up to, inclined, habituated. (Uncommitted, free, uncompromised, neutral.)

ADDITION—annexation, accession, supplement, adjunct, affix, appendage, accessory, increment, increase, complement, *plus*, more. (Subtraction, deduction, retrenchment, curtailment, deprivation, *minus*, less, loss, impoverishment.)

ADDRESS—speech, salutation, accost, appeal; also skill, dexterity, adroitness; also direction, name; also residence. (Response, answer, reply, rejoinder; also awkwardness, maladroitness, clumsiness, slovenliness.)

ADHESION—sticking, adherence, adoption, attachment, espousal. (Repulsion, revulsion, antipathy, aversion, hostility, incompatibility, dislike.)

ADJACENT—next, near, nigh, at hand, alongside, close by, adjoining, contiguous, bordering, neighboring, proximate. (Remote, foreign, distant, aloof, far, apart, asunder.)

ADJOURN—put off, postpone, defer, delay, keep in abeyance, prorogue, suspend, procrastinate, retard, waive, remand, reserve. (Conclude, clinch, accelerate, precipitate.)

ADJUNCT—appendage, affix, annex, annexation, appendix, adhesion, appurtenance. (Curtailment, retrenchment, lop, mutilation, reduction, clipping, docking, filching.)

ADJUST—make exact, set right, fit, adapt, dovetail, arrange, harmonize, settle, regulate. (Confound, confuse, muddle, disorder, perplex, embarrass, entangle, clash, jar, jumble, disarrange, unsettle.)

ADMIRABLE—wonderful, excellent, choice, noble, grand, estimable, lovely, ideal, surpassing, extraordinary, eminent. (Detestable, vile, mean, contemptible, despicable, worthless, wretched, villainous, pitiful.)

ADMIT—allow, permit, suffer, receive, usher, grant, acknowledge, confess, concede, accept. (Deny, refuse, shut out, forbid, disown, disclaim.)

ADVANTAGEOUS—profitable, serviceable, useful, beneficial, helpful, of value. (Disadvantageous, detrimental, prejudicial, injurious, hurtful, harmful, deleterious, obnoxious, pernicious.)

AFFECTION—bent, inclination, partiality, attraction, impulse, love, desire, passion, fascination; also suffering, disease, morbidness. (Repulsion, revulsion, antipathy, dislike, recoil, aversion, estrangement, indifference, coldness, alienation; also wholeness, soundness, healthiness.)

AFFECTIONATE—loving, kind, fond, doting, tender, amiable, cordial, hearty, good-hearted. (Cold, unloving, unkind, heartless, selfish, crabbed, sour, malign, malicious, malevolent, misanthropic, cynical, ill-natured, cruel, hating.)

AGREEABLE—pleasant, acceptable, grateful, refreshing, genial, pleasing, palatable, sweet, charming, delectable. (Disagreeable, displeasing, unpleasant, ungrateful, harsh, repellent, painful, noxious, plaguy, irritating, annoying, mortifying.)

ALTERNATING—reciprocal, correlative, interchangeable, by turns, *vice versa*. (Monotonous, unchanging, continual.)

AMBASSADOR—messenger, envoy, emissary, legate, nuncio, diplomatist, diplomate, representative, vicegerent, plenipotentiary, minister, agent. (Principal, government, sovereign, power.)

AMEND—improve, correct, better, meliorate, rectify, prune, repair, revise, remedy, reform. (Injure, impair, damage, harm, hurt, mar, mangle, blemish, deteriorate, ruin, spoil.)

ANGER—resentment, animosity, wrath, indignation, pique, umbrage, huff, displeasure, dungeon, irritation, irascibility, choler, ire, hate. (Kindness, benignity, *bonhomie*, good nature.)

APPROPRIATE—assimilate, assume, possess oneself of, take, grab, clutch, collar, snap up, capture, steal. (Relinquish, give up, surrender, yield, resign, forego, renounce, abandon, discard, dismiss.)

ARGUE—reason, discuss, debate, dispute, contend. (Obscure, darken, mystify, mislead, misrepresent, evade, sophisticate.)

ARISE—rise, ascend, mount, climb, soar, spring, emanate, proceed, issue. (Descend, fall, gravitate, drop, slide, settle, decline, sink, dismount, alight.)

ARTFUL—cunning, crafty, skilful, wily, designing, politic, astute, knowing, tricky. (Artless, naïve, natural, simple, plain, ingenuous, frank, sincere, open, candid, guileless, straightforward, direct.)

ARTIFICE—contrivance, stratagem, trick, design, plot, machination, chicanery, knavery, jugglery, guile, jobbery. (Artlessness, candor, openness, simplicity, innocence, ingenuousness.)

ASSOCIATION—partnership, fellowship, solidarity, league, alliance, combination, coalition, federation, junto, cabal. (Opposition, antagonism, conflict, counteraction, resistance, hinderance, counterplot, detachment, individualism.)

ATTACK—assault, charge, onset, onslaught, incursion, inroad, bombardment, cannonade. (Defence, protection, guard, ward, resistance, stand, repulse, rebuff, retreat.)

AUDACITY—boldness, defiance, prowess, intrepidity, mettle, game, pluck, fortitude, rashness, temerity, presumption, foolhardiness, courage, hardihood. (Cowardice, pusillanimity, timidity, meekness, poltroonery, fear, caution, calculation, discretion, prudence.)

AUSTERE—severe, harsh, rigid, stern, rigorous, uncompromising, inflexible, obdurate, exacting, straight-laced, unrelenting. (Lax, loose, slack, remiss, weak, pliant, lenient, mild, indulgent, easy-going, forbearing, forgiving.)

AVARICIOUS—tight-fisted, griping, churlish, parsimonious, stingy, penurious, miserly, niggardly, close, illiberal, ungenerous, covetous, greedy, rapacious. (Prodigal, thriftless, improvident, extravagant, lavish, dissipated, freehanded.)

AVERSION—antipathy, revulsion, repulsion, dislike, recoil, estrangement, alienation, repugnance, disgust, nausea. (Predilection, fancy, fascination, allurement, attraction, magnet.)

AWE—dread, fear, reverence, prostration, admiration, bewilderment. (Familiarty, indifference, heedlessness, unconcern, contempt, mockery.)

AXIOM—maxim, aphorism, apophthegm, adage, motto, *dictum*, theorem, truism, proverb, saw. (Absurdity, paradox.)

BABBLE—splash, gurgle, bubble, purl, ripple, prattle, clack, gabble, clash, jabber, twaddle, prate, chatter, blab. (Silence, hush.)

BAD—depraved, defiled, distorted, corrupt, evil, wicked, wrong, sinful, morbid, foul, peccant, noxious, pernicious, diseased, imperfect, tainted, touched. (Good, whole, sound, healthy, beneficial, salutary, prime, perfect, entire, untouched, unblemished, intact, choice, worthy.)

BAFFLE—thwart, checkmate, defeat, disconcert, confound, block, outwit, traverse, contravene, frustrate, balk, foil. (Aid, assist, succor, further, forward, expedite, sustain, second, reinforce.)

BASE—crude, undeveloped, low, villainous, mean, deteriorated, misbegotten, ill-contrived, ill-constituted. (Noble, exalted, lofty, sublime, excellent, elect, choice, aristocratic, exquisite, capital.)

BEAR—carry, hold, sustain, support, suffer, endure, beget, generate, produce, breed, hatch. (Lean, depend, hang, yield, sterile, unproductive.)

BEASTLY—bestial, animal, brutal, sensual, gross, carnal, lewd. (Human, humane, virtuous, moral, ethical, intellectual, thoughtful, spiritual.)

BEAT—strike, smite, thrash, thwack, thump, pummel, drub, leather, baste, belabor, birch, scourge, defeat, surpass, rout, overthrow. (Protect, defend, soothe.)

BEAUTIFUL—fair, complete, symmetrical, handsome. (Ugly, repulsive, foul.)

BECOMING—suiting, accordant, fit, seemly. (Discrepant, improper, in bad form.)

BEG—beseech, crave, entreat. (Offer, proffer.)

BEHAVIOR—carriage, deportment, conduct.

BENEFICENT—bountiful, generous, liberal. (Sordid, mercenary.)

BENEFIT—good, advantage, service. (Loss, detriment, injury.)

BENEVOLENCE—well-wishing, charity. (Malevolence, malice, hate.)

BLAME—censure, reproach. (Approve, honor.)

BLEMISH—flaw, stain, spot, imperfection, defect. (Ornament, decoration, embellishment, adornment, finery, gilding.)

BLIND—dimsighted, ignorant, uninformed. (Sharpsighted, enlightened.)

BLOT—efface, cancel, expunge, erase. (Record.)

BOLD—brave, daring, fearless, intrepid, courageous. (Cowardly, timid, shy, chicken-hearted.)

BORDER—margin, boundary, frontier, confine, fringe, hem, selvedge, valance. (Inclosure, interior, inside.)

BOUND—circumscribe, limit, restrict, confine, enclose; *also* leap, jump, hop, spring, vault, skip. (Enlarge, clear, deliver; *also* plunge, dip, sink.)

BRAVE—dare, defy. (Cave in, show the white feather.)

BREAK—bruise, crush, pound, squeeze, crack, snap, splinter. (Bind, hold together, knit, rivet.)

BREEZE—blow, zephyr. (Stillness, hush, calm.)

BRIGHT—shining, lustrous, radiant. (Dull, dim.)

BRITTLE—frangible, fragile, frail. (Tough.)

BURIAL—interment, sepulture, obsequies. (Exhumation, disinterment.)

BUSINESS—occupation, employment, pursuit, vocation, calling, profession, craft, trade. (Leisure, vacation, play.)

BUSTLE—stir, fuss, ado, flurry. (Quiet, stillness.)

CALAMITY — misfortune, disaster, catastrophe. (Good luck, prosperity.)

CALM—still, motionless, placid, serene, composed. (Stormy, unsettled, restless, agitated, distracted.)

CAPABLE—competent,able,efficient. (Unqualified.)

CAPTIOUS—censorious, cantankerous. (Conciliatory, bland.)

CARE—solicitude, concern. (Negligence, carelessness, *nonchalance.*)

CARESS—fondle, love, pet. (Spurn, disdain.)

CARNAGE—butchery, gore, massacre, slaughter.

CAUSE—origin, source, ground, reason, motive

CENSURE—reprehend, chide. (Approve.)

CERTAIN—sure, infallible. (Doubtful, dubious.)

CESSATION—discontinuance, stoppage, rest, halt. (Perseverance, persistence, continuance.)

CHANCE—accident, luck. (Intention, purpose.)

'CHANGE—exchange, *bourse*, mart, emporium.

CHANGEABLE—mutable, variable, fickle. (Steadfast, firm.)

CHARACTER—constitution, nature, disposition.

CHARM—fascination, enchantment, witchery, attraction. (Nuisance, mortification, bore, plague.)

CHASTITY—purity, virtue. (Concupiscence.)

CHEAP—inexpensive, worthless. (Dear, costly.)

CHEERFUL—blithe, lightsome, brisk, sprightly. (Melancholy, sombre, morose, gloomy, sad.)

CHIEF—sachem, head, ruler. (Vassal, henchman.)

CIRCUMSTANCE—situation, predicament.

CLASS—division, category, department, order, kind, sort, genus, species, variety.

CLEVER—adroit, dexterous, expert, deft, ready, smart. (Awkward, dull, shiftless, clumsy.)

CLOTHED—dressed, arrayed, apparelled. (Disrobed, stripped.)

COARSE—crude, unrefined. (Refined, cultivated.)

COAX—cajole, wheedle, fawn, lure, induce, entice. (Dissuade, indispose, warn, admonish.)

COLD—frigid, chill, inclement. (Hot, glowing.)

COLOR—hue, tint, tinge, tincture, dye, shade, stain. (Pallor, paleness, wanness, blankness, achromatism, discoloration.)

COMBINATION—coalescence, fusion, faction, coalition, league. (Dissolution, rupture, schism.)

COMMAND—empire, rule. (Anarchy, license.)

COMMODITY—goods, effects, merchandise, stock.

COMMON—general, ordinary, mean, base. (Rare, exceptional, unique.

COMPASSION—pity, commiseration, sympathy. (Cruelty, severity.)

COMPEL—force, coerce, oblige, necessitate, make, constrain. (Let alone, tolerate.)

COMPENSATION—amends, atonement, requital. (Withholding.)

COMPENDIUM—abstract, epitome, digest. (Amplification, expansion.)

COMPLAIN—lament, murmur, regret, repine, deplore. (Rejoice, exult, boast, brag, chuckle.)

COMPLY—consent, yield, acquiesce. (Refuse, deny, decline.)

COMPOUND, *a.*—composite, complex, blended. (Simple, elementary.)

COMPREHEND—comprise, contain, embrace, include, enclose, grasp. (Exclude, reject, mistake, eliminate, loss.)

CONCEAL—hide, secrete, cover, screen, shroud, veil, disguise. (Publish, report, divulge)

CONCEIVE—grasp, apprehend, devise, invent. (Ignorant of.)

CONCLUSION—result, finding. (Undetermined.)

CONDEMN—convict, find guilty, sentence, doom. (Acquit.)

CONDUCT, *v.*—direct, manage, govern. (Follow, obey, submit.)

CONFIRM—corroborate, ratify, endorse, support, uphold. (Weaken, enfeeble, reduce.)

CONFLICT—contend, contest, wrestle, tussle, clash, wrangle. (Harmonize, agree, fraternize, concur.)

CONFUTE—refute, disprove. (Demonstrate.)

CONQUER—defeat, vanquish, overcome. (Fail, be beaten, lose.)

CONSEQUENCE—effect, derivation, result, event, issue. (Cause, origin, source, antecedent.)

CONSIDER—reflect, deliberate. (Forget, ignore.)

CONSISTENT—accordant, concordant, compatible, consonant, congruous, reconcilable, harmonious. (Discordant, discrepant.)

CONSOLE—relieve, soothe, comfort. (Embitter.)

CONSTANCY—continuance, tenacity, stability. (Irresolution, fickleness.)

CONTAMINATE—Pollute, stain, taint, tarnish, blur, smudge, defile. (Cleanse, purify, purge.)

CONTEMN—despise, disdain, scorn. (Esteem, appreciate, admire.)

CONTEMPLATE—survey, scan, observe, intend. (Disregard.)

CONTEMPTIBLE—despicable, paltry, shabby, beggarly, worthless, vile, cheap, trashy. (Estimable.)

CONTEND—fight, wrangle, vie. (Be at peace.)

CONTINUAL—perpetual, endless, ceaseless. (Momentary, transient.)

CONTINUE—remain, persist, endure. (Desist, stay.)

CONTRADICT—deny, gainsay, oppose. (Affirm, assert, declare.)

CORRECT—mend, rectify. (Impair, muddle.)

COST—expense, charge, price, value.

COVETOUSNESS—avarice, cupidity, extortion. (Generosity, liberality.)

COWARDICE — poltroonery, faint - heartedness. (Courage, boldness, intrepidity.)

CRIME—offence, trespass, misdemeanor, felony, transgression. (Innocence, guiltlessness.)

CRIMINAL—culprit, felon, convict. (Paragon.)

CROOKED—twisted, distorted, bent, awry, wry, askew, deformed. (Straight, upright.)

CRUEL—brutal, ferocious, barbarous, blood-thirsty, fiendish. (Kind, benignant, benevolent.)

CULTIVATION—tillage, culture. (Waste.)

CURSORY—fugitive, hurried, perfunctory. (Permanent, thorough.)

CUSTOM—habit, wont, usage, fashion, practice.

DANGER—peril, hazard, jeopardy. (Safety.)

DARK—obscure, sombrous, opaque, unintelligible. (Light, luminous, shining, clear, lucid.)

DEADLY—mortal, fatal, destructive, lethal.

DEAR—costly, precious, high-priced, beloved, darling, pet, favorite. (Cheap, disliked, despised.)

DEATH—decease, demise, dissolution. (Birth, life.)

DECAY, *n.*—decline, consumption, atrophy. (Development, growth.)

DECEIVE—cheat, defraud, cozen, overreach, gull, dupe, swindle, victimize. (Truthfulness.)

DECEIT, *n.*—imposition, fraud, deception. (Veracity, honesty.)

DECIDE—determine, resolve, conclude, settle, adjudicate, arbitrate, terminate. (Hesitate, dilly-dally, shuffle.)

DECIPHER—interpret, explain, construe, unravel. (Mistake, confound.)

DECISION—determination, conclusion, firmness. (Wavering, hesitancy.)

DECLAMATION — harangue, oration, recitation, tirade, speech.

DECLARATION—affirmation, assertion. (Denial.)

DECREASE—diminish, lessen, reduce, wane, decline. (Increase, grow, enlarge.)

DEDICATE—consecrate, devote, offer, apportion.

DEED—act, transaction, exploit, document.

DEEM—judge, estimate, consider, esteem, suppose.

DEEP—profound, abtruse, hidden, extraordinarily wise. (Shallow, superficial.)

DEFACE—mar, spoil, injure, disfigure. (Beautify.)

DEFAULT—shortcoming, deficiency, defect, imperfection. (Sufficiency, satisfaction.)

DEFENCE—fortification, bulwark, vindication, justification, apology.

DEFEND—shield, vindicate. (Assault, accuse.)

DEFICIENT—incomplete, lacking. (Entire, perfect, whole.)

DEFILE—soil, smutch, besmear, begrime.

DEFINE—limit, bound. (Enlarge, expand.)

DEFRAY—pay, settle, liquidate, satisfy, clear.

DEGREE—grade, extent, measure, ratio, standard.

DELIBERATE, *a.*—circumspect, wary, cautious. (Heedless, thoughtless.)

DELICACY—nicety, dainty, tit-bit, taste, refinement, modesty. (Grossness, coarseness, vulgarity, indecorum.)

DELICATE—dainty, refined. (Coarse, beastly.)

DELICIOUS—savory, palatable, luscious, charming, delightful. (Offensive, nasty, odious, shocking, nauseous.)

DELIGHT—gratification, felicity. (Mortification, vexation.)

DELIVER—transfer, consign, utter, liberate, declare. (Keep, retain, restrain, check, bridle.)

DEMONSTRATE—prove, show, manifest. (Mystify, obscure.)

DEPART—quit, vacate, retire, withdraw, remove.

DEPRIVE—strip, bereave, despoil. (Invest, equip.)

DEPUTE—commission, delegate, accredit, entrust.

DERISION—ridicule, scoffing, mockery, raillery, chaff, *badinage.* (Awe, dread, reverence.)

DERIVATION—origin, source, spring, emanation, etymology.

DESCRIBE—delineate, portray, style, specify, characterize.

DESECRATE—profane, blaspheme, revile. (Consecrate, sanctify.)

DESERVE—merit, be entitled to, earn, justify.

DESIGN, *n.*—delineation, illustration, sketch, plan, drawing, portraiture, draught, projection, scheme, proposal, outline.

DESIRABLE—eligible, suitable, acceptable. (Unfit, objectionable.)

DESIRE, *n.*—wish, longing, hankering, appetite.

DESOLATE, *a.*—lonely, solitary, bereaved, forlorn, forsaken, deserted, bleak, dreary. (Befriended, social, festive.)

DESPERATE—frenzied, frantic, furious. (Calm, composed, moderate.)

DESTINY—fatality, doom, predestination, decree, fate. (Casualty, accident, contingency, chance.)

DESTRUCTIVE—mischievous, disastrous, deleteri- (Creative, beneficial.)

DESUETUDE—disuse, discontinuance. (Use, habit, practice.)

DESULTORY—immethodical, disconnected, rambling, discontinuous, interrupted, fitful, intermittent. (Continuous, consecutive, constant.)

DETAIL, *n.*—particular, item, count, specialty, individuality.

DETAIL, *v.*—particularize, enumerate, specify. (Generalize.)

DETER—discourage, dissuade. (Encourage, incite.)

DETRIMENT—damage, loss. (Benefit, improvement, betterment.)

DEVELOP—unfold, expand, increase. (Extirpate.)

DEVOID—wanting, destitute, bereft, denuded, bare, emptied, void. (Provided, supplied, furnished.)

DEVOTED—destined, consecrated, sworn to.

DICTATE—enjoin, order, prescribe, mark out.

DICTATORIAL—authoritative, imperative, overbearing, imperious, arbitrary, domineering.

DIE—expire, perish, depart this life, cease.

DIET—food, victuals, nourishment, aliment, board, sustenance, fare, viands, meal, repast, *menu.*

DIFFER—vary, diverge, disagree, bicker, nag, split. (Accord, harmonize.)

DIFFERENT—various, diverse, unlike. (Identical.)

DIFFICULT—hard, tough, laborious, arduous, formidable. (Easy, facile, manageable, pliant.)

DIFFUSE—discursive, digressive, diluted. (Condensed, concise, terse.)

DIGNIFY—elevate, exalt, ennoble, honor, advance, promote. (Degrade, disgrace, demean, vulgarize.)

DILATE—widen, extend, enlarge, expand, descant, expatiate. (Contract, narrow, compress, reduce.)

DILATORY—slow, tardy, slow-paced, procrastinating, lagging, dawdling. (Prompt, peremptory, quick, instant.)

DILIGENCE—zeal, ardor, assiduity. (Indolence.)

DIMINISH—lessen, reduce, curtail, retrench, bate, abate, shorten, contract. (Increase, augment, aggrandize, enlarge.)

DISABILITY—incapacity, unfitness. (Power.)

DISCERN—descry, perceive, distinguish, espy, scan, recognize, understand, discriminate. (Ignore.)

DISCIPLINE—order, training, drill, schooling.) (Laxity, disorder, confusion, anarchy.)

DISCOVER—detect, find, unveil, reveal, open, expose, publish, disclose. (Cover, conceal, hide.)

DISCREDITABLE — disreputable, reprehensible, blameworthy, shameful, scandalous, flagrant. (Exemplary, laudable, commendable.)

DISCREET—prudent, politic, cautious, wary, guarded, judicious. (Reckless, heedless, rash, unadvised, foolhardy, precipitate.)

DISCREPANCY—disagreement, discordance, incongruity, disparity, unfitness, clash, jar. (Concord, unison, harmony, congruity.)

DISCRIMINATION — distinction, differentiation, discernment, appreciation, acuteness, judgment, tact, nicety. (Confusion.)

DISEASE—illness, sickness, ailment, indisposition, complaint, malady, disorder. (Health, sanity, soundness, robustness.)

DISGRACE, *n.*—stigma, reproach, brand, dishonor, shame, scandal, odium, infamy. (Honor.)

DISGUST—distate, loathing, nausea, aversion, revulsion, abhorrence. (Predilection, partiality, inclination, bias.)

DISHONEST—fraudulent, unfair, tricky, unjust. (Straightforward, open, sincere, honest, fair, right, just impartial.)

DISMAY, *v.*—alarm, startle, scare, frighten, affright, terrify, astound, appal, daunt. (Assure, cheer.)

DISMAY, *n.*—terror, dread, fear, fright. (Courage.)

DISMISS—send off, discharge, disband. (Instal, retain, keep.)

DISPEL—scatter, disperse, dissipate, drive off, chase. (Collect, rally, summon, gather.)

DISPLAY, *v.*—exhibit, show, parade. (Conceal.)

DISPOSE—arrange, place, order, marshal, rank, group, assort, distribute, co-ordinate, collocate. (Derange, embroil, jumble, muddle, huddle.)

DISPUTE, *v.*—discuss, debate, wrangle, controvert, contend. (Homologate, acquiesce in, assent to.)

DISPUTE. *n.*—argument, controversy, contention, polemic. (Homologation, acquiesence.)

DISTINCT—separate, detached. (Joined, involved.)

DISTINGUISH—perceive, separate. (Confound.)

DISTINGUISHED—famous, noted, marked, eminent, celebrated, illustrious. (Obscure, mean.)

DISTRACT—divert, disconcert, perplex, bewilder, fluster, dazzle. (Observe, study, note, mark.)

DISTRIBUTE—disperse, disseminate, dispense, retail, apportion, consign, dole out. (Accumulate.)

DISTURB—derange, displace, unsettle, trouble, vex, worry, annoy. (Compose, pacify, quiet, soothe.)

DIVIDE—disjoin, part, separate, sunder, sever, cleave, split, rend, partition, distribute. (Constitute, unite.)

DIVINE, *a.*—God-like, holy, heavenly. (Devilish.)

DIVINE, *n.*—clergyman, churchman, priest, pastor, shepherd, parson, minister. (Layman.)

DO—effect, make, accomplish, transact, act.

DOCILE—teachable, willing. (Refractory, stubborn, obstinate.)

DOCTRINE—teaching, lore, tenet, dogma, articles of faith, creed. (Ignorance, superstition.)

DOLEFUL—woeful, dismal. (Joyous, merry.)

DOOM, *n*,—sentence, fate, lot, destiny, decree.

DOUBT—uncertainty, skepticism, hesitation. (Certainty, faith.)

DRAW—pull, attract, inhale, sketch, delineate.

DREAD, *n.*—fear, horror, alarm, terror, dismay, apprehension. (Confidence, fearlessness.)

DREADFUL—fearful, alarming, formidable, portentous, direful, terrible, horrid, awful. (Mild, winsome, gentle.)

DRESS, *n.*—clothing, raiment, attire, apparel, clothes, *trousseau.* (Nudity, nakedness.)

DRIFT—tendency, direction, course, bearing, tenor.

DROLL—funny, laughable, grotesque, farcical, odd. (Dull, serious, solemn, grave.)

DRY, *a.*—arid, parched, bald, flat, dull. (Aqueous, green, fresh, juicy, interesting.)

DUE—owing, indebted, just, fair, proper.

DULL—heavy, sad, commonplace, gloomy, stupid. (Bright, gay, brilliant.)

DUNCE—blockhead, ignoramus, simpleton, donkey, nimny, dolt, booby, goose, dullard, numskull, dunderpate, clodhopper. (Sage, genius, man of talent, wit.)

DURABLE—abiding, lasting. (Evanescent.)

DWELL—stay, abide, sojourn, remain, tarry, stop. (Shift, wander, remove, tramp.)

DWINDLE—pine, waste, shrink, shrivel, diminish.

EAGER—keen, desirous, craving, ardent, impatient, intent, impetuous. (Loth, reluctant.)

EARN—gain, win, acquire. (Lose, miss, forfeit.)

EARNEST, *a.*—serious, resolved. (Trifling, giddy, irresolute, fickle.)

EARNEST, *n.*—pledge, gage, deposit, caution.

EASE, *n.*—content, rest, satisfaction, comfort, repose. (Worry, bother, friction, agitation, turmoil.)

EASE, *v.*—calm, console, appease, assuage, allay, mitigate. (Worry, fret, alarm, gall, harass.)

EASY—light, comfortable, unconstrained. (Hard, difficult, embarrassed, constrained.)

ECCENTRIC—wandering, irregular, peculiar, odd, unwonted, extraordinary, queer, nondescript. (Orderly, customary.)

ECONOMICAL—frugal, thrifty, provident. (Squandering, wasteful.)

EDGE—verge, brink, brim, rim, skirt, hem.

EFFECT, *v.*—produce, bring about, execute.

EFFECTIVE—efficient, operative, powerful, efficacious, competent. (Impotent, incapable, incompetent, inefficient.)

EFFICACY—efficiency, virtue, competence, agency, instrumentality.

ELIMINATE—expel, weed, thin, decimate, exclude, bar, reject, repudiate, winnow, eject, cast out. (Include, comprehend, incorporate, embrace.)

ELOQUENCE—oratory, rhetoric, declamation, facundity, grandiloquence, fluency. (Mumbling, stammering.)

ELUCIDATE—clear up, unfold, simplify, explain, decipher, unravel, disentangle. (Darken, obscure.)

ELUDE—escape, avoid, shun, slip, disappear, shirk.

EMBARRASS—perplex, entangle, involve, impede. (Relieve, unravel.)

EMBELLISH—adorn, decorate, beautify. (Tarnish, disfigure.)

EMBOLDEN—animate, encourage, cheer, instigate, impel, urge, stimulate. (Discourage, dispirit, dampen, depress.)

EMINENT—exalted, lofty, prominent, renowned, distinguished, famous, glorious, illustrious. (Base, obscure, low, unknown.)

EMIT—send out, despatch, spirt, publish, promulgate, edit. (Reserve, conceal, hide.)

EMOTION—feeling, sensation, pathos, nerve, ardor, agitation, excitement. (Apathy, frigidity, phlegm, *nonchalance.*)

EMPLOY—occupy, engage, utilize, exercise, turn to account, exploit, make use of.

ENCOMPASS—encircle, surround, gird, beset.

ENCOUNTER, *v.*—meet, run against, clash.

ENCOUNTER, *n.*—attack, conflict, assault, onset, engagement.

END, *n.*—object, aim, result, purpose, conclusion, upshot, termination. (Beginning, motive.)

ENDEAVOR, *v.*—attempt, try, essay, strive.

ENDURANCE—stay, stability, stamina, fortitude.

ENDURE—sustain, bear, brook, undergo.

ENEMY—foe, antagonist, adversary, opponent. (Friend, ally.)

ENERGETIC—active, vigorous, sinewy, nervous, forcible. (Lazy, languid, inert, flabby, flaccid, slack, effete.)

ENGAGE—occupy, busy, entice, captivate.

ENGROSS—monopolize, absorb, take up.

ENGULF—swallow up, drown, submerge, bury.

ENJOIN—order, command, decree, ordain, direct, appoint, prescribe, bind, impose, stipulate.

ENJOYMENT—pleasure, relish, zest. (Privation, grief, misery.)

ENLARGE—expand, widen, augment, broaden, increase, extend. (Diminish, narrow, straighten.)

ENLIGHTEN—illumine, instruct. (Darken, befog, mystify.)

ENLIVEN—cheer, animate, exhilarate, brighten, incite, inspire. (Sadden, deaden, mortify.)

ENMITY—hostility, hatred, antipathy, aversion, detestation. (Love, fondness, predilection.)

ENORMOUS—huge, immense, vast, stupendous, monstrous, gigantic, colossal, elephantine. (Tiny, little, minute, puny, petty, diminutive, infinitesimal, dwarfish.)

ENOUGH—sufficient, adequate. (Short, scrimp, insufficient.)

ENRAGED—infuriated, wrathful, wroth, rabid, mad, raging. (Pacified, calmed, lulled, assuaged.)

ENRAPTURE—captivate, fascinate, enchant, bewitch, ravish, transport, entrance. (Irritate, gall, shock, repel.)

ENROLL—enlist, register, enter, record.

ENTERPRISE—undertaking, endeavor, adventure, pursuit.

ENTHUSIASM—ardor, zeal, glow, unction, fervor. (Coolness, indifference, apathy, *nonchalance.*)

ENTHUSIAST—visionary, fanatic, devotee, zealot.

EQUAL—even, level, co-ordinate, balanced, alike, equable, equitable. (Unequal, disproportionate.)

ERADICATE—root out, extirpate. (Cherish.)

ERRONEOUS—fallacious, inaccurate, incorrect, untrue, false, inexact. (Accurate, just, right.)

ERROR—mistake, blunder, slip, delusion, fallacy, deception. (Truth, fact, verity, gospel, veracity.)

ESPECIALLY—chiefly, particularly, peculiarly.

ESSAY—endeavor, experiment, trial, attempt, venture, dissertation, treatise, disquisition, tract.

ESTABLISH—settle, fix, set, plant, pitch, lay down, confirm, authenticate, substantiate, verify.

ESTEEM, *n.*—value, appreciation, honor, regard. (Contempt, depreciation, disparagement.)

ESTIMATE, *v.*—value, assess, rate, appraise, gauge.

ETERNAL—everlasting, perpetual, endless, immortal, infinite. (Finite, transitory, temporary.)

EVADE—avoid, shun, elude, dodge, parry.

EVEN—plain, flat, level, smooth. (Uneven, rough, indented, protuberant.)

EVENT—occurrence, incident, affair, transaction, contingency.

EVIL—ill, harm, mischief, disaster, bane, calamity, catastrophe. (Good, benefit, advantage, boon.)

EXACT, *a.*—precise, literal, particular, correct.

EXAMINATION—investigation, inquiry, search, research, scrutiny, exploration, test, sitting, trial.

EXCEED—excel, outdo, transcend, surpass.

EXCEPTIONAL—uncommon, unusual, rare, extraordinary. (General, ordinary, regular, normal.)

EXCITE—urge, rouse, stir, awaken. (Assuage, calm, still, tranquilize.)

EXCURSION—tour, trip, expedition, ramble.

EXEMPT—free, absolved, cleared, discharged. (Implicated, included, bound, obliged.)

EXERCISE, *n.*—operation, practice, office, action, performance. (Stagnation, rest, stoppage.)

EXHAUSTIVE—complete, thorough, out-and-out.

EXIGENCY—predicament, emergency, crisis, push, pass, turning point, conjecture.

EXPRESS, *v.*—utter, tell, declare, signify.

EXTRAVAGANT — excessive, prodigal, profuse, wasteful, lavish, thriftless. (Penurious, stingy.)

FABLE—parable, tale, myth, romance. (Truth, fact, history, event, deed.)

FACE—aspect, visage, countenance.

FACETIOUS—pleasant, jocular. (Serious.)

FACTOR—manager, agent, officer.

FAIL—fall short, be deficient. (Accomplish.)

FAINT—feeble, languid. (Forcible.)

FAIR—clear. (Stormy.)

FAIR—equitable, honest, reasonable. (Unfair.)

FAITH—creed. (Unbelief, infidelity.)

FAITHFUL—true, loyal, constant. (Faithless.)

FAITHLESS—perfidious, treacherous. (Faithful.)

FALL—drop, droop, sink, tumble. (Rise.)

FAME—renown, reputation.

FAMOUS—celebrated, renowned. (Obscure.)

FANCIFUL—capricious, fantastical, whimsical.

FANCY—imagination.

FAST—rapid, quick, fleet, expeditious. (Slow.)

FATIGUE—weariness, lassitude. (Vigor.)

FEAR—timidity, timorousness. (Bravery.)

FEELING—sensation, sense.

FEELING—sensibility. (Insensibility.)

FEROCIOUS—fierce, savage, wild. (Mild.)

FERTILE—fruitful, prolific, plenteous. (Sterile.)

FICTION—falsehood, fabrication. (Fact.)

FIGURE—allegory, emblem, metaphor, symbol, picture, type.

FIND—descry, discover, espy. (Lose, overlook.)

FINE, *a.*—delicate, nice. (Coarse.)

FINE, *n.*—forfeit, forfeiture, mulct, penalty.

FIRE—glow, heat, warmth.

FIRM—constant, solid, steadfast, fixed. (Weak.)

FIRST—foremost, chief, earliest. (Last.)

FIT—accommodate, adapt, adjust, suit.

FIX—determine, establish, settle, limit.

FLAME—blaze, flare, flash, glare.

FLAT—level, even.

FLEXIBLE—pliant, pliable, ductile. (Inflexible.)

FLOURISH—prosper, thrive. (Decay.)

FLUCTUATING—wavering, hesitating, oscillating, vacillating, change. (Firm, steadfast, decided.)

FLUENT—flowing, glib, voluble, unembarrassed, ready. (Hesitating.)

FOLKS—persons, people, individuals.

FOLLOW—succeed, ensue, imitate, copy, pursue.

FOLLOWER—partisan, disciple, adherent, retainer, pursuer, successor.

FOLLY—silliness, foolishness, imbecility, weakness. (Wisdom.)

FOND—enamored, attached, affectionate. (Distant.)

FONDNESS—affection, attachment, kindness, love. (Aversion.)

FOOLHARDY—venturesome, incautious, hasty, adventurous, rash. (Cautious.)

FOOLISH—simple, silly, irrational, brainless, imbecile, crazy, absurd, preposterous, ridiculous, nonsensical. (Wise, discreet.)

FOP—dandy, dude, beau, coxcomb, puppy, jackanapes. (Gentlemen.)

FORBEAR—abstain, refrain, withhold.

FORCE, *n.*—strength, vigor, dint, might, energy, power, violence, army, host.

FORCE, *v.*—compel. (Persuade.)

FORECAST—forethought, foresight, premeditation, prognostication.

FOREGO—quit, relinquish, let go, waive.

FOREGOING—antecedent, anterior, preceding, previous, prior, former.

FORERUNNER—herald, harbinger, precursor.

FORESIGHT—forethought, forecast, premeditation.

FORGE—coin, invent, frame, feign, fabricate.

FORGIVE—pardon, remit, absolve, acquit, excuse.

FORLORN—forsaken, abandoned, deserted, desolate, lone, lonesome.

FORM, *n.*—ceremony, solemnity, observance, rite, figure, shape, conformation, fashion, appearance, representation, semblance.

FORM, *v.*—make, create, produce, constitute, arrange, fashion, mould, shape.

FORMAL—ceremonious, precise, exact, stiff, methodical, affected. (Informal, natural.)

FORMER—antecedent, anterior, previous, prior, preceding, foregoing.

FORSAKEN—abandoned, forlorn, deserted, desolate, lone, lonesome.

FORTHWITH—immediately, directly, instantly, instantaneously. (Anon.)

FORTITUDE—endurance, resolution, fearlessness, dauntlessness. (Weakness.)

FORTUNATE—lucky, happy, auspicious, successful, prosperous. (Unfortunate.)

FORTUNE—chance, fate, luck, doom, possession, destiny, property, riches.

FOSTER—cherish, nurse, tend, harbor. (Neglect.)

FOUL—impure, nasty, filthy, dirty, unclean, defiled. (Pure, clean.)

FRACTIOUS—cross, captious, petulent, splenetic, touchy, testy, peevish, fretful. (Tractable.)

FRAGILE—brittle, frail, delicate, feeble. (Strong.)

FRAGMENTS—pieces, scraps, leavings, remnants, chips, remains.

FRAILTY—weakness, failing, foible, imperfection, fault, blemish. (Strength.)

FRAME, *v.*—construct, invent, coin, fabricate, feign, forge, mold, make, compose.

FRANCHISE—right, exemption, immunity, privilege, freedom, suffrage.

FRANK—artless, candid, sincere, free, easy, open, familiar, ingenious, plain. (Tricky, insincere.)

FRANTIC — distracted, furious, raving, frenzied, mad. (Quiet, subdued.)

FRAUD—deceit, deception, duplicity, guile, cheat, imposition. (Honesty.)

FREAK—fancy, humor, vagary, whim, caprice, crochet. (Purpose, resolution.)

FREE, *a.*—liberal, generous, bountiful, bounteous, munificent, frank, artless, candid, familiar, open, independent, unconfined, unreserved, unrestricted, exempt, clear, loose, easy, careless. (Slavish, stingy, artful, costly.)

FREE, *v.*—release, set free, deliver, rescue, liberate, enfranchise, affranchise, emancipate, exempt. (Enslave, bind)

FREEDOM — liberty, independence, unrestraint, familiarity, franchise, exemption. (Slavery.)

FREQUENT—often, common, general. (Rare.)

FRET—gall, chafe, agitate, irritate, vex.

FRIENDLY—amicable, social, sociable. (Distant, reserved, cool.)

FRIGHTFUL—fearful, dreadful, dire, direful, awful, terrific, horrible, horrid.

FRIVOLOUS—trifling, trivial, petty. (Serious.)

FRUGAL—provident, economical, saving. (Wasteful, extravagant.)

FRUITFUL—fertile, prolific, productive, abundant, plentiful, plenteous. (Barren, sterile.)

FRUITLESS—vain, useless, idle, bootless, unavailing, without avail.

FRUSTRATE—defeat, foil, balk, disappoint.

FULFILL—accomplish, effect, complete.

FULLY—completely, abundantly, perfectly.

FULSOME — coarse, gross, sickening, offensive, rank. (Moderate.)

FURIOUS—violent, boisterous, vehement, dashing, sweeping, rolling, impetuous, frantic, distracted, stormy, angry, raging, fierce. (Calm.)

FUTILE—trifling, trivial, frivolus. (Effective.)

GAIN, *n.*—profit, emolument, advantage, benefit, winnings, earnings. (Loss.)

GAIN, *v.*—get, acquire, obtain, attain, procure, earn, win, achieve, reap, realize, reach. (Lose.)

GALLANT—brave, bold, courageous, gay, showy, fine, intrepid, fearless, heroic.

GALLING—chafing, irritating. (Soothing.)

GAME—play, pastime, diversion, amusement.

GANG—band, horde, company, troop, crew.

GAP—breach, chasm, hollow, cavity, cleft, clevice, rift, chink.

GARNISH—embellish, adorn, beautify, decorate.

GATHER—pick, cull, assemble, muster, infer, collect. (Scatter.)

GAUDY—showy, flashy, tawdry, gay, glittering, bespangled. (Sombre.)

GAUNT—emaciated, scraggy, skinny, meagre, lank, attenuated, spare, lean, thin. (Well-fed.)

GAY—cheerful, merry, lively, jolly, sprightly, blithe. (Solemn.)

GENERATE—form, make, beget, produce.

GENERATION—formation, race, breed, stock, kind, age, era.

GENEROUS—beneficent, noble, honorable, bountiful, liberal, free. (Niggardly.)

GENIAL—cordial, hearty, festive. (Distant, cold.)

GENIUS—intellect, invention, talent, taste, nature, character, adept.

GENTEEL—refined, polished, fashionable, polite, well-bred. (Boorish.)

GENTLE—placid, mild, bland, meek, tame, docile. (Rough, uncouth,)

GENUINE—real, true, unaffected. (False.)

GESTURE—attitude, action, posture.

GET—obtain, earn, gain, attain, procure, achieve.

GHASTLY—pallid, wan, hideous, grim, shocking.

GHOST—spectre, sprite, apparition, phantom.

GIBE—scoff, sneer, flout, jeer, mock, taunt, deride.

GIDDY—unsteady, thoughtless. (Steady.)

GIFT—donation, benefaction, grant, alms, gratuity, boon, present, faculty, talent. (Purchase.)

GIGANTIC—colossal, huge, enormous, prodigious, vast, immense. (Diminutive.)

GIVE—grant, bestow, confer, yield, impart.

GLAD—pleased, cheerful, joyful, gladsome, cheering, gratified. (Sad.)

GLEAM—glimmer, glance, glitter, shine, flash.

GLEE—gayety, merriment, mirth, joviality, joy, hilarity. (Sorrow.)

GLIDE—slip, slide, run, roll on.

GLIMMER, *v.*—gleam, flicker, glitter.

GLIMPSE—glance, look, glint.

GLITTER—gleam, shine, glisten, glister, radiate.

GLOOM—cloud, darkness, dimness, blackness, dullness, sadness. (Light, brightness, joy.)

GLOOMY—lowering, lurid, dim, dusky, sad, glum. (Bright, clear.)

GLORIFY—magnify, celebrate, adore, exalt.

GLORIOUS—famous, renowned, distinguished, exalted, noble. (Infamous.)

GLORY—honor, fame, renown, splendor, grandeur. (Infamy.)

GLUT—gorge, stuff, cram, cloy, satiate, block up.

GO—depart, proceed, move, budge, stir.

GOD—Creator, Lord, Almighty, Jehovah, Omnipotence, Providence.

GODLY—righteous, devout, holy, pious, religious.

GOOD—benefit, weal, advantage, profit. (Evil.)

GOOD, *a.*—virtuous, righteous, upright, just, true. (Wicked, bad.)

GORGE, glut, fill, cram, stuff, satiate.

GORGEOUS—superb, grand, magnificent, splendid. (Plain, simple.)

GOVERN—rule, direct, manage, command.

GOVERNMENT—rule, state, control, sway.

GRACEFUL—becoming, comely, elegant, beautiful. (Awkward.)

GRACIOUS—merciful, kindly, beneficent.

GRADUAL—slow, progressive. (Sudden.)

GRAND—majestic, stately, dignified, lofty, elevated, exalted, splendid, gorgeous, superb, magnificent, sublime, pompous. (Shabby.)

GRANT—bestow, impart, give, yield, cede, allow, confer, invest.

GRANT—gift, boon, donation.

GRAPHIC—forcible, telling, picturesque, pictorial.

GRASP—catch, seize, gripe, clasp, grapple.

GRATEFUL—agreeable, pleasing, welcome, thankful. (Harsh.)

GRATIFICATION—enjoyment, pleasure, delight, reward. (Disappointment.)

GRAVE, *a.*—serious, sedate, solemn, sober, pressing, heavy. (Giddy.)

GRAVE, *n.*—tomb, sepulchre, vault.

GREAT—big, huge, large, majestic, vast, grand, noble, august. (Small.)

GREEDINESS—avidity, eagerness. (Generosity.)

GRIEF—affliction, sorrow, trial, tribulation. (Joy.)

GRIEVE—mourn, lament, sorrow, pain, wound, hurt, bewail. (Rejoice.)

GRIEVOUS—painful, afflicting, heavy, unhappy.

GRIND—crush, oppress, grate, harass, afflict.

GRISLY—terrible, hideous, grim, ghastly, dreadful. (Pleasing.)

GROSS—coarse, outrageous, unseemly, shameful, indelicate. (Delicate.)

GROUP—assembly, cluster, collection, clump, order.

GROVEL—crawl, cringe, fawn, sneak.

GROW—increase, vegetate, expand, advance. (Decay, diminution,)

GROWL—grumble, snarl, murmur, complain.

GRUDGE—malice, rancor, spite, pique, hatred.

GRUFF—rough, rugged, blunt, rude, harsh, surly, bearish. (Pleasant.)

GUILE—deceit, fraud. (Candor.)

GUILTLESS—harmless, innocent.

GUILTY—culpable, sinful, criminal.

HABIT—custom, practice.

HAIL—accost, address, greet, salute, welcome.

HAPPINESS—beatitude, blessedness, bliss, felicity. (Unhappiness.)

HARBOR—haven, port.

HARD—firm, solid. (Soft.)

HARD—arduous, difficult. (Easy.)

HARM—injury, hurt, wrong, infliction. (Benefit.)

HARMLESS—safe, innocuous, innocent. (Hurtful.)

HARSH—rough, rigorous, severe, gruff. (Gentle.)

HASTEN—accelerate, dispatch, expedite. (Delay.)

HASTY—hurried, ill-advised. (Deliberate.)

HATEFUL—odious, detestable. (Lovable.)

HATRED—enmity, ill-will, rancor. (Friendship.)

HAUGHTINESS—arrogance, pride. (Modesty.)

HAUGHTY—arrogant, disdainful, supercilious.

HAZARD—risk, venture.

HEALTHY—salubrious, salutary. (Unhealthy.)

HEAP—accumulate, amass, pile.

HEARTY—cordial, sincere, warm. (Insincere.)

HEAVY—burdensome, ponderous. (Light.)

HEED—care, attention.

HEIGHTEN—enhance, exalt, elevate, raise.

HEINOUS—atrocious, flagrant. (Venial.)

HELP—aid, assist, relieve, succor. (Hinder.)

HERETIC—sectary, sectarian, schismatic, dissenter, non-conformist.

HESITATE—falter, stammer, stutter.

HIDEOUS—grim, ghastly, grisly. (Beautiful.)

HIGH—lofty, tall, elevated. (Deep.)

HINDER—impede, obstruct, prevent, (Help.)

HINT—allude, refer, suggest, intimate, insinuate.

HOLD—detain, keep, retain.

HOLINESS—sanctity, piety, sacredness.

HOLY—devout, pious, religious.

HOMELY—plain, ugly, coarse. (Beautiful.)

HONESTY—integrity, probity, uprightness. (Dishonesty.)

HONOR, *v.*—respect, reverence. (Dishonor.)

HOPE—confidence, expectation, trust.

HOPELESS—desperate.

HOT—ardent, burning, fiery. (Cold.)

HOWEVER—nevertheless, notwithstanding, yet.

HUMBLE—modest, submissive, plain, unostentatious, simple. (Haughty.)

HUMBLE—degrade, humiliate, mortify. (Exalt.)

HUMOR—mood, temper.

HUNT—seek, chase.

HURTFUL—noxious, pernicious. (Beneficial.)

HUSBANDRY—cultivation, tillage.

HYPOCRITE—dissembler, imposter, canter.

HYPOTHESIS—theory, supposition.

IDEA—thought, imagination.

IDEAL—imaginary, fancied. (Actual.)

IDLE—indolent, lazy. (Industrious.)

IGNOMINIOUS—shameful, scandalous, infamous. (Honorable.)

IGNOMINY—shame, disgrace, obloquy, reproach.

IGNORANT—unlearned, illiterate, uninformed. uneducated. (Knowing.)

ILL, *n.*—evil, wickedness, misfortune, mischief, harm. (Good.)

ILL, *a.*—sick, indisposed, diseased. (Well.)

ILL-TEMPERED—crabbed, sour, acrimonious, surly. (Good-natured.)

ILL-WILL—enmity, antipathy. (Good-will.)

ILLEGAL—unlawful, illicit, contraband, illegitimate. (Legal.)

ILLIMITABLE—boundless, immeasurable, infinite.

ILLITERATE—unlettered, unlearned, untaught, uninstructed. (Learned, educated.)

ILLUSION—fallacy, deception, phantasm.

ILLUSORY—imaginary, chimerical. (Real.)

ILLUSTRATE—explain, elucidate, clear.

ILLUSTRIOUS—celebrated, noble, eminent, famous, renowned. (Obscure.)

IMAGE—likeness, picture, representation, effigy.

IMAGINARY—ideal, fanciful, illusory. (Real.)

IMAGINE—conceive, fancy, apprehend, think.

IMBECILITY—silliness, senility, dotage.

IMITATE—copy, ape, mimic, mock, counterfeit.

IMMACULATE—unspotted, spotless, unsullied, stainless. (Soiled.)

IMMEDIATE—pressing, instant, next, proximate.

IMMEDIATELY—instantly, forthwith, directly.

IMMENSE—vast, enormous, huge, prodigious.

IMMUNITY—privilege, prerogative, exemption.

IMPAIR—injure, diminish, decrease.

IMPART—reveal, divulge, disclose, discover, afford.

IMPARTIAL—just, equitable, unbiased. (Partial.)

IMPASSIONED—glowing, burning, fiery, intense.

IMPEACH—accuse, charge, arraign, censure.

IMPEDE—hinder, retard, obstruct. (Help.)

IMPEDIMENT—obstruction, hindrance, obstacle, barrier. (Aid.)

IMPEL—animate, induce, incite, instigate. embolden. (Retard.)

IMPENDING—imminent, threatening.

IMPERATIVE—commanding, authoritative.

IMPERFECTION—fault, blemish, defect, vice.

IMPERIL—endanger, hazard, jeopardize.

IMPERIOUS—commanding, dictatorial, imperative, authoritative, lordly, overbearing, domineering.

IMPERTINENT—intrusive, meddling, officious, rude, saucy, impudent, insolent.

IMPETUOUS—violent, boisterous, furious, vehement. (Calm.)

IMPIOUS—profane, irreligious. (Reverent.)

IMPLICATE—involve, entangle, embarrass.

IMPLY—involve, comprise, infold, import, denote.

IMPORTANCE—signification, significance, avail, consequence, weight, gravity, moment.

IMPOSING—impressive, striking, majestic, august, noble, grand. (Insignificant.)

IMPOTENCE—weakness, incapacity, infirmity, frailty, feebleness. (Power.)

IMPOTENT—weak, feeble, helpless, enfeebled, nerveless, infirm. (Strong.)

IMPRESSIVE—stirring, forcible, exciting, moving.

IMPRISON—incarcerated, shut up, immure, confine. (Liberate.)

IMPRISONMENT—captivity, durance.

IMPROVE—amend, better, mend, reform, rectify, ameliorate, apply, use, employ. (Deteriorate.)

IMPROVIDENT—careless, incautious, imprudent, prodigal, wasteful, reckless, rash. (Thrifty.)

IMPUDENCE—assurance, impertinence, confidence, insolence, rudeness.

IMPUDENT—saucy, brazen, bold, impertinent, forward, rude, insolent, immodest, shameless.

IMPULSE—incentive, incitement, instigation.

IMPULSIVE—rash, hasty, forcible. (Deliberate.)

IMPUTATION—blame, censure, reproach, charge.

INADVERTENCY—error, oversight, blunder, inattention, carelessness, negligence.

INCENTIVE—motive, inducement, impulse.

INCITE—instigate, excite, provoke, stimulate, urge, encourage, impel.

INCLINATION—leaning, slope, disposition, bent, tendency, bias, affection, attachment, wish, liking, desire. (Aversion.)

INCLINE, *v.*—slope, lean, slant, tend, bend, turn, bias, dispose.

INCLOSE—surround, shut in, fence in, cover, wrap.

INCLUDE—comprehend, comprise, contain, take in, embrace.

INCOMMODE—annoy, plague, molest, disturb, inconvenience, trouble. (Accommodate.)

INCOMPETENT—incapable, unable, inadequate.

INCREASE, *v.*—extend, enlarge, augment, dilate, expand, amplify, raise, enhance, aggravate, magnify, grow. (Diminish.)

INCREASE, *n.*—augmentation, accession, addition, enlargement, extension. (Decrease.)

INCUMBENT—obligatory.

INDEFINITE—vague, uncertain, unsettled, loose, lax. (Definite.)

INDICATE—point out, show, mark.

INDIFFERENCE—apathy, carelessness, listlessness, insensibility. (Application, assiduity.)

INDIGENCE—want, neediness, penury, poverty, destitution, privation. (Affluence.)

INDIGNATION—anger, wrath, ire, resentment.

INDIGNITY—insult, affront, outrage, opprobrium, obloquy, reproach, ignominy. (Honor.)

INDISCRIMINATE—promiscuous, chance, indistinct, confused. (Select, chosen.)

INDISPENSABLE—essential, necessary, requisite, expedient. (Unnecessary, supernumerary.)

INDISPUTABLE—undeniable, undoubted, incontestable, indubitable, unquestionable, infallible.

INDORSE—ratify, confirm, superscribe.

INDULGE—foster, cherish, fondle. (Deny.)

INEFFECTUAL—vain, useless, unavailing, fruitless, abortive, inoperative. (Effective.)

INEQUALITY—disparity, disproportion, dissimilarity, unevenness. (Equality.)

INEVITABLE—unavoidable, not to be avoided.

INFAMOUS—scandalous, shameful, ignominious, opprobrious, disgraceful. (Honorable.)

INFERENCE—deduction, corollary, conclusion.

INFERNAL—diabolical, fiendish, devilish, hellish.

INFEST—annoy, plague, harass, disturb.

INFIRM—week, feeble, enfeebled. (Robust.)

INFLAME—anger, irritate, enrage, chafe, incense, nettle, aggravate, embitter, exasperate. (Allay.)

INFLUENCE, *v.*—bias, sway, prejudice, preposess.

INFLUENCE, *n.*—credit, favor, reputation, weight, character, authority, sway, ascendency.

INFRINGE—invade, intrude, contravene, break, transgress, violate.

INGENUOUS—artless, candid, generous, sincere, open, frank, plain. (Crafty.)

INHUMAN—cruel, brutal, savage, barbarous, ruthless, merciless, ferocious. (Humane.)

INIQUITY—injustice, wrong, grievance.

INJURE—damage, hurt, deteriorate, wrong, spoil, aggrieve, harm, mar, sully. (Benefit.)

INJURIOUS—hurtful, baneful, pernicious, deleterious, noxious, prejudicial, wrongful. (Beneficial.)

INJUSTICE—wrong, iniquity, grievance. (Right.)

INNOCENT—guiltless, sinless, harmless, inoffensive, innoxious. (Guilty.)

INNOCUOUS—harmless, safe, innocent. (Hurtful.)

INORDINATE—intemperate, irregular, disorderly, excessive, immoderate. (Moderate.)

INQUIRY—investigation, examination, research, scrutiny, disquisition, question, interrogation.

INQUISITIVE—prying, peeping, curious, peering.

INSANE—deranged, delirous, demented. (Sane.)

INSANITY—madness, mental aberration, lunacy, delirium. (Sanity.)

INSINUATE—hint, intimate, suggest, infuse, introduce, ingratiate.

INSIPID—dull, flat, mawkish, tasteless, inanimate, vapid, lifeless. (Bright, sparkling.)

INSOLENT—rude, saucy, impertinent, abusive, pert, scurrilous, opprobrious, insulting, offensive.

INSPIRE—animate, exhilarate, enliven, breathe, cheer, inhale.

INSTABILITY—mutability, fickleness, mutableness, wavering. (Stability, firmness.)

INSTIGATE—stir up, persuade, animate, stimulate, incite, urge, encourage.

INSTIL—implant, inculcate, infuse, insinuate.

INSTRUCT—inform, teach, educate, enlighten.

INSTRUMENTAL—conducive, assistant, helping.

INSUFFICIENCY — incompetency, incapability, inadequacy, deficiency, lack.

INSULT—affront, outrage, indignity. (Honor.)

INSULTING—insolent, impertinent, abusive, rude.

INTEGRITY—uprightness, honesty, completeness, probity, entirety, entireness, purity. (Dishonesty.)

INTELLECT—understanding, sense, brains, mind, intelligence, ability, talent, genius. (Body.)

INTELLECTUAL—mental, metaphysical. (Brutal.)

INTELLIGIBLE—clear, obvious, plain. (Abstruse.)

INTEMPERATE—immoderate, excessive, drunken, nimious, inordinate. (Temperate.)

INTENSE—ardent, earnest, glowing, fervid, burning, vehement.

INTENT—design, purpose, intention, drift, view, aim, purport, meaning.

INTERCOURSE—commerce, connection, intimacy.

INTERDICT—forbid, prohibit, inhibit, proscribe, debar, restrain from. (Allow.)

INTERFERE—meddle, intermeddle, interpose.

INTERMINABLE—endless, interminate, infinite, unlimited, illimitable, boundless. (Brief.)

INTERPOSE—intercede, arbitrate, mediate, interfere, meddle.

IMTERPRET—explain, expound, elucidate, unfold.

INTIMATE—hint, suggest, insinuate, express, tell, signify, impart.

INTIMIDATE—dishearten, alarm, frighten, scare, appal, daunt, cow, browbeat. (Encourage.)

INTOLERABLE—insufferable, unbearable, insupportable, unendurable.

INTREPID—bold, brave, daring, fearless, dauntless, undaunted, courageous, valorous, valiant, heroic, gallant, chivalrous, doughty. (Cowardly, faint-hearted.)

INTRIGUE—plot, cabal, conspiracy, combination, artifice, ruse, *amour.*

INTRINSIC—real, true, genuine, sterling, native, natural. (Extrinsic.)

INVALIDATE—quash, cancel, overthrow, vacate, nullify, annul.

INVASION—incursion, irruption, inroad, aggression, raid, fray.

INVECTIVE—abuse, reproach, railing, censure, sarcasm, satire.

INVENT—devise, contrive, frame, find out, discover.

INVESTIGATION—examination, search, inquiry, research, scrutiny.

INVETERATE — confirmed, chronic, malignant. (Inchoate.)

INVIDIOUS—envious, hateful, odious, malignant.

INVIGORATE—brace, harden, nerve, strengthen, fortify. (Enervate.)

INVINCIBLE—unconquerable, impregnable, insurmountable.

INVISIBLE—unseen, imperceptible, impalpable.

INVITE—ask, call, bid, request, allure, attract.

INVOKE—invocate, call upon, appeal, refer, implore, beseech.

INVOLVE—implicate, entangle, compromise.

IRKSOME—wearisome, tiresome, tedious, annoying. (Pleasant.)

IRONY—sarcasm, satire, ridicule, raillery.

IRRATIONAL—foolish, silly, imbecile, brutish, absurd, ridiculous. (Rational.)

IRREGULAR—eccentric, anomalous, inordinate, intemperate. (Regular.)

IRRELIGIOUS—profane, godless, impious, sacrilegious, desecrating.

IRREPROACHABLE—blameless, spotless.

IRRESISTIBLE—resistless, irrepressible.

IRRESOLUTE—wavering, undetermined, undecided, vacillating. (Determined.)
IRRITABLE—excitable, irascible, susceptible, sensitive. (Calm.)
IRRITATE—aggravate, worry, embitter, madden.
ISSUE, *v.*—emerge, rise, proceed, flow, spring.
ISSUE, *n.*—end, upshot, effect, result, offspring.
JADE—harass, weary, tire, worry.
JANGLE—wrangle, conflict, disagree.
JARRING—conflicting, discordant, inconsonant.
JAUNT—ramble, excursion, trip.
JEALOUSY—suspicion, envy.
JEOPARD—hazard, peril, endanger.
JEST—joke, sport, divert, make game of.
JOURNEY—travel, tour, passage.
JOY—gladness, mirth, delight. (Grief.)
JUDGE—justice, referee, arbitrator.
JOYFUL—glad, rejoicing, exultant. (Mournful.)
JUDGMENT—discernment, discrimination.
JUSTICE—equity, right. Justice is right as established by law; equity according to the circumstances of each particular case. (Injustice.)
JUSTNESS—accuracy, correctness, precision.

KEEP—preserve, save. (Abandon.)
KILL—assassinate, murder, slay.
KINDRED—affinity, consanguinity, relationship.
KNOWLEDGE—erudition, learning. (Ignorance.)

LABOR—toil, work, effort, drudgery. (Idleness.)
LACK—need, deficiency, scarcity, insufficiency. (Plenty.)
LAMENT—mourn, grieve, weep. (Rejoice.)
LANGUAGE—dialect, idiom, speech, tongue.
LASCIVIOUS—loose, unchaste, lustful, lewd, lecherous. (Chaste.)
LAST—final, latest, ultimate. (First.)
LAUDABLE—commendable. (Blamable.)
LAUGHABLE—comical, droll, ludicrous. (Serious.)
LAWFUL—legal, legitimate, licit. (Illegal.)
LEAD—conduct, guide. (Follow.)
LEAN—meager. (Fat.)
LEARNED—erudite, scholarly. (Ignorant.)
LEAVE, *v.*—quit, relinquish.
LEAVE, *n.*—liberty, permission. (Prohibition.)
LIFE—existence, animation, spirit. (Death.)
LIFELESS—dead, inanimate.
LIFT—erect, elevate, exalt, raise. (Lower.)
LIGHT—clear, bright. (Dark.)
LIGHTNESS—flightiness, giddiness, levity, volatility. (Seriousness.)
LIKENESS—resemblance, similarity. (Unlikeness.)
LINGER—lag, loiter, tarry, saunter. (Hasten.)
LITTLE—diminutive, small. (Great.)
LIVELIHOOD—living, maintenance, subsistence.
LIVELY—jocund, merry, sportive, sprightly, vivacious. (Slow, languid, sluggish.)
LONG—extended, extensive. (Short.)
LOOK—appear, seem, aspect, glance, peep.
LOSE—miss, forfeit. (Gain.)
LOSS—detriment, damage, deprivation. (Gain.)
LOUD—clamorous, high-sounding, noisy. (Low, quiet.)
LOVE—affection. (Hatred.)
LOW—abject, mean. (Noble.)
LUNACY—derangement, insanity, mania, madness. (Sanity.)
LUSTER—brightness, brilliancy, splendor.
LUXURIANT—exuberant. (Sparse.)

MACHINATION—plot, intrigue, cabal, conspiracy. (Artlessness.)
MAD—crazy, delirious, insane, rabid, violent, frantic. (Sane, rational, quiet.)
MADNESS—insanity, fury, rage, frenzy.
MAGISTERIAL—august, dignified. majestic, pompous, stately.
MAKE—form, create, produce. (Destroy.)
MALEDICTION—anathema, curse, imprecation.
MALEVOLENT—malicious, virulent, malignant. (Benevolent.)
MALICE—spite, rancor, ill-feeling, grudge, animosity, ill-will. (Benignity.)
MALICIOUS—see malevolent.
MANACLE, *v.*—shackle, fetter, chain. (Free.)
MANAGE—contrive, concert, direct.
MANAGEMENT—direction, superintendence, care.
MANGLE—tear, lacerate, mutilate, cripple, maim.
MANIA—madness, insanity, lunacy.
MANIFEST, *v.*—reveal, prove, evince, exhibit, display, show.
MANIFEST, *a.*—clear, plain, evident, open, apparent, visible. (Hidden, occult.)
MANIFOLD—several, sundry, various, divers.
MANLY—masculine, vigorous, courageous, brave, heroic. (Effeminate.)
MANNER—habit, custom, way, air, look.
MANNERS—morals, habits, behavior, carriage.
MAR—spoil, ruin, disfigure. (Improve.)
MARCH—tramp, tread, walk, step, space.
MARGIN—edge, rim, border, brink, verge.
MARK, *n.*—sign, note, symptom, token, indication, trace, vestige, track, badge, brand.
MARK, *v.*—impress, print, stamp, engrave, note.
MARRIAGE—wedding, nuptials, matrimony.
MARTIAL—military, warlike, soldierlike.
MARVEL—wonderful, miracle, prodigy.
MARVELOUS—wondrous, wonderful, miraculous.
MASSIVE—bulky, heavy, weighty, ponderous, solid, substantial. (Flimsy.)
MASTERY—dominion, rule, sway, ascendancy.
MATCHLESS—unrivaled, unequaled, unparalleled, peerless, incomparable, inimitable, surpassing. (Common, ordinary.)
MATERIAL, *a.*—corporeal, bodily, physical, temporal, momentous. (Spiritual, immaterial.)

MAXIM—adage, apothegm, proverb, saying, by-word, saw.

MEAGER—poor, lank, emaciated, barren, dry, uninteresting. (Rich.)

MEAN, *a.*—stingy, niggardly, low, abject, vile, ignoble, degraded, contemptible, vulgar, despicable. (Generous.)

MEAN, *v.*—design, purpose, intend, contemplate, signify, denote, indicate.

MEANING—signification, import, acceptation, sense, purport.

MEDIUM—organ, channel, instrument, means.

MEDLEY—mixture, variety, diversity, miscellany.

MEEK—unassuming, mild, gentle. (Proud.)

MELANCHOLY—low-spirited, dispirited, dreamy, sad. (Jolly, buoyant.)

MELLOW—ripe, mature, soft. (Immature.)

MELODIOUS—tuneful, musical, silver, dulcet, sweet. (Discordant.)

MEMORABLE—signal, distinguished, marked.

MEMORIAL—monument, memento.

MEMORY—remembrance, recollection.

MENACE, *n.*—threat.

MEND—repair, amend, correct, better, ameliorate, improve, rectify.

MENTION—tell, name, communicate, impart, divulge, reveal, disclose, inform, acquaint.

MERCIFUL—compassionate, lenient, clement, tender, gracious, kind. (Cruel.)

MERCILESS—hard-hearted, cruel, unmerciful, pitiless, remorseless, unrelenting. (Kind.)

MERRIMENT—mirth, joviality, jollity. (Sorrow.)

MERRY—cheerful, mirthful, joyous, gay, lively, sprightly, hilarious, blithe, blithesome, jovial. sportive, jolly. (Sad.)

METAPHORICAL—figurative, allegorical.

METHOD—way, manner, mode, process, order, rule, regularity, system.

MIEN—air, look, manner, aspect, appearence.

MIGRATORY—roving, strolling, wandering, vagrant. (Settled, sedate, permanent.)

MIMIC—imitate, ape, mock.

MINDFUL—observant, attentive. (Heedless.)

MISCELLANEOUS—promicuous, indiscriminate.

MISCHIEF—injury, harm, damage, hurt. (Benefit.)

MISCREANT—caitiff, villain, ruffian.

MISERABLE—unhappy, wretched, distressed, afflicted. (Happy.)

MISERLY—stingy, niggardly, avaricious, griping.

MISERY—wretchedness, woe, destitution, penury, privation, beggary. (Happiness.)

MISFORTUNE—calamity, disaster, mishap, catastrophe. (Good luck.)

MISS—omit, lose, fall, miscarry.

MITIGATE—alleviate, relieve, abate. (Aggravate.)

MODERATE—temperate, abstemious, sober, abstinent. (Immoderate.)

MODEST—chaste, virtuous, bashful. (Immodest.)

MOIST—wet, damp, dank, humid. (Dry.)

MONOTONOUS—unvaried, tiresome. (Varied.)

MONSTROUS—shocking, dreadful, horrible, huge.

MONUMENT—memorial, record, remembrancer.

MOOD—humor, disposition, vein, temper.

MORBID—sick, ailing, sickly, diseased, corrupted. (Normal, sound.)

MOROSE—gloomy, sullen, surly, fretful, crabbed, crusty. (Joyous.)

MORTAL—deadly, fatal, human.

MOTION—proposition, proposal, movement.

MOTIONLESS—still, stationary, torpid, stagnant. (Active, moving.)

MOUNT—arise, rise, ascend, soar, tower, climb.

MOURNFUL—sad, sorrowful, lugubrious, grievous, doleful, heavy, (Happy.)

MOVE—actuate, impel, induce, prompt, instigate, persuade, stir, agitate, propel, push.

MULTITUDE—crowd, throng, host, mob, swarm.

MURDER, *v.*—kill, assassinate, slay, massacre.

MUSE, *v.*—meditate, contemplate, think, reflect, cogitate, ponder.

MUSIC—harmony, melody, symphony.

MUSICAL—tuneful, melodious, harmonious, sweet.

MUSTY—stale, sour, fetid. (Fresh, sweet.)

MUTE—dumb, silent, speechless.

MUTILATE—maim, cripple, disable, disfigure.

MUTINOUS—insurgent, seditious, tumultuous, turbulent, riotous. (Obedient, orderly.)

MUTUAL—reciprocal, interchanged, correlative. (Sole, solitary.)

MYSTERIOUS—dark, obscure, hidden, secret, dim, mystic, enigmatical, unaccountable. (Open, clear.)

MYSTIFY—confuse, perplex. (Clear, explain.)

NAKED—nude, bare, uncovered, unclothed, rough, rude, simple. (Covered, clad.)

NAME, *v.*—denominate, entitle, style, designate, term, call, christen.

NAME, *n.*—appellation, designation, denomination, title, cognomen, reputation, character, fame, credit, repute.

NARRATE—tell, relate, detail, recount, describe, enumerate, rehearse, recite.

NASTY—filthy, foul, dirty, unclean, impure, gross, indecent, vile.

NATION—people, community, realm, state.

NATIVE—indigenous, inborn, vernacular.

NATURAL—original, regular, normal, bastard. (Unnatural, forced.)

NEAR—nigh, neighboring, close, adjacent, contiguous, intimate. (Distant.)

NECESSARY—needful, expedient, essential, indispensable, requisite. (Useless.)

NECESSITATE—compel, force, oblige.

NECESSITY—need, occasion, exigency, emergency, urgency, requisite.

NEED, *n.*—necessity, distress, poverty, indigence, want, penury.

NEED, *v.*—require, want, lack.

NEGLECT, *v.*—disregard, slight, omit, overlook.

NEGLECT, *n.*—omission, failure, default, slight, negligence, remissness, carelessness.
NEIGHBORHOOD—environs, vicinity, nearness, adjacency, proximity.
NERVOUS—timid, timorous, shaky.
NEW—fresh, recent, novel. (Old.)
NEWS—tidings, intelligence, information.
NICE—exact, accurate, good, particular, precise, fine, delicate. (Careless, coarse, unpleasant.)
NIMBLE—active, brisk, lively, alert, quick, agile, prompt. (Awkward.)
NOBILITY—aristocracy, greatness, grandeur.
NOBLE—exalted, elevated, illustrious, great, grand, lofty. (Low.)
NOISE—cry, outcry, clamor, row, din, uproar, tumult. (Silence.)
NONSENSICAL—irrational, absurd, silly, foolish. (Sensible.)
NOTABLE—plain, evident, remarkable, striking, signal, rare. (Obscure.)
NOTE, *n.*—token, symbol, mark, sign, indication, remark, comment.
NOTED—distinguished, remarkable, eminent, renowned. (Obscure.)
NOTICE, *n.*—advice, notification, intelligence.
NOTICE, *v.*—mark, note, observe, attend to, heed.
NOTIFY, *v.*—publish, acquaint, apprise, inform.
NOTION—conception, idea, belief, opinion.
NOTORIOUS — conspicuous, open, obvious, ill-famed. (Unknown.)
NOURISH — nurture, cherish, foster, supply. (Starve, famish.)
NOURISHMENT—food, diet, sustenance, nutrition.
NOVEL—modern, new, fresh, recent, unused, rare, strange. (Old.)
NOXIOUS—hurtful, deadly poisonous, deleterious, baneful. (Beneficial.)
NULLIFY—annul, vacate, invalidate, quash, cancel, repeal. (Affirm.)
NUTRITION—food, diet, nutriment, nourishment.

OBDURATE—hard, callous, hardened, unfeeling, insensible. (Yielding, tractable.)
OBEDIENT—compliant, submissive, dutiful, respectful. (Obstinate.)
OBESE—corpulent, fat, adipose. (Attenuated.)
OBEY, *v.*—conform, comply, submit. (Rebel.)
OBJECT, *n.*—aim, end, purpose, design, mark.
OBJECT, *v.*—oppose, except to, contravene, impeach, deprecate. (Assent.)
OBNOXIOUS—offensive. (Agreeble.)
OBSCURE—undistinguished, unknown. (Distinguished.)
OBSTINATE—contumacious, headstrong, stubborn, obdurate. (Yielding.)
OCCASION—opportunity.
OFFENCE—affront, misdeed, misdemeanor, transgression, trespass.
OFFENSIVE—insolent, abusive. (Inoffensive.)
OFFICE—charge, function, place.
OFFSPRING—issue, progeny, children, posterity.
OLD—aged, superannuated, ancient, antique, antiquated, obsolete, old-fashioned. (Young, new.)
OMEN—presage, prognostic.
OPAQUE—dark. (Bright, transparent.)
OPEN—candid, unreserved, clear, fair. (Hidden.)
OPINION—notion, view, judgment, sentiment.
OPINIONATED—conceited, egotistical. (Modest.)
OPPOSE—resist, withstand, thwart. (Give way.)
OPTION—choice.
ORDER—method, system, regularity. (Disorder.)
ORIGIN—cause, occasion, beginning. (End.)
OUTLIVE—survive.
OUTWARD—external, outside, exterior. (Inner.)
OVER—above. (Under.)
OVERBALANCE—outweigh, preponderate.
OVERBEAR—bear down, overwhelm, overpower.
OVERBEARING—haughty, arrogant. (Gentle.)
OVERFLOW—inundation, deluge.
OVERRULE—supersede, suppress.
OVERSPREAD—overrun, ravage.
OVERTURN—invert, overthrow, reverse, subvert. (Establish, fortify.)
OVERWHELM—crush, defeat, vanquish.

PAIN—suffering, qualm, pang, agony, anquish. (Pleasure.)
PALLID—pale, wan. (Florid.)
PART—division, portion, share, fraction. (Whole.)
PARTICULAR—exact, distinct, singular, strange, odd. (General.)
PATIENT—passive, submissive. (Obdurate.)
PEACE—calm, quiet, tranquility. (War, trouble, riot, turbulence.)
PEACEABLE—pacific, peaceful, quiet. (Troublesome, riotous.)
PENETRATE—bore, pierce, perforate.
PENETRATION—acuteness, sagacity. (Dullness.)
PEOPLE—nation, persons, folks.
PERCEIVE—note, observe, discern, distinguish.
PERCEPTION—conception, notion, idea.
PERIL—danger, pitfall, snare. (Safety.)
PERMIT—allow, tolerate. (Forbid.)
PERSUADE—allure, entice, prevail upon.
PHYSICAL—corporeal, bodily, material. (Mental.)
PICTURE—engraving, print, representation, illustration, image.
PITEOUS—doleful, woeful, rueful. (Joyful.)
PITILESS—see merciless.
PITY—compassion, sympathy. (Cruelty.)
PLACE, *n.*—spot, site, position, post, situation.
PLACE, *v.*—order, dispose.
PLAIN—open, manifest, evident. (Secret.)
PLAY—game, sport, amusement. (Work.)
PLEASE—gratify, pacify. (Displease.)
PLEASURE—charm, delight, joy. (Pain.)
PLENTIFUL—abundant, ample, copious, plenteous. (Scarce.)

POISE—balance, equilibrium, evenness.

POSITIVE—absolute, peremptory, decided, certain. (Negative, undecided.)

POSSESSOR—owner, proprietor.

POSSIBLE—practical, practicable. (Impossible.)

POVERTY—penury, indigence, need. (Wealth.)

POWER—authority, force, strength, dominion.

POWERFUL—mighty, potent. (Weak.)

PRAISE—commend, extol, laud. (Blame.)

PRAYER—entreaty, petition, request, suit.

PRETENCE, *n.*—pretext, subterfuge.

PREVAILING—predominant, prevalent, general. (Isolated, sporadic.)

PREVENT—obviate, preclude.

PREVIOUS—antecedent, introductory, preparatory, preliminary. (Subsequent.)

PRIDE—vanity, conceit. (Humility.)

PRINCIPALLY—chiefly, essentially, mainly.

PRINCIPLE—ground, reason, motive, impulse, maxim, rule, rectitude, integrity.

PRIVILEGE—immunity, advantage, favor, claim, prerogative, exemption, right.

PROBITY—rectitude, uprightness, honesty, integrity, sincerity, soundness. (Dishonesty.)

PROBLEMATICAL—uncertain, doubtful, dubious, questionable, disputable, suspicious. (Certain.)

PRODIGIOUS—huge, enormous, vast, amazing, astonishing, astounding, surprising, remarkable, wonderful. (Insignificant.)

PROFESSION—business, trade, occupation, office, vocation, employment, engagement, avowal.

PROFFER—volunteer, offer, propose, tender.

PROFLIGATE—abandoned, dissolute, depraved, vicious, degenerate, corrupt. (Virtuous.)

PROFOUND—deep, fathomless, penetrating, recondite, solemn, abstruse. (Shallow.)

PROFUSE—extravagant, prodigal, lavish, copious, improvident, excessive, plentiful. (Succinct.)

PROLIFIC—productive, generative, fertile, fruitful, teeming. (Barren)

PROLIX—diffuse, long, prolonged, tedious, wordy, tiresome, verbose, prosaic. (Concise, brief.)

PROMINENT—eminent, conspicuous, marked, important, leading. (Obscure.)

PROMISCUOUS—mixed, unarranged, mingled, indiscriminate. (Select.)

PROMPT—See punctual.

PROP, *v.*—maintain, sustain, support, stay.

PROPAGATE—spread, circulate, diffuse, disseminate, extend, breed, increase. (Suppress.)

PROPER—legitimate, right, just, fair, equitable, honest, suitable, fit, adapted, meet, becoming, befitting, decent, pertinent. (Wrong.)

PROSPER—flourish, succeed, grow rich, thrive, advance. (Fail.)

PROSPERITY—well-being, weal, welfare, happiness, good luck. (Poverty.)

PROXY—agent, representative, substitute, deputy.

PRUDENCE—carefulness, judgment, discretion, wisdom. (Indiscretion.)

PRURIENT—itching, craving, hankering, longing.

PUERILE—youthful, juvenile, boyish, childish, infantile, trifling, weak, silly. (Mature.)

PUNCTILIOUS—nice, particular, formal, precise. (Negligent.)

PUNCTUAL — exact, precise, nice, particular, prompt, timely. (Dilatory.)

PUTREFY—rot, decompose, corrupt, decay.

PUZZLE, *v.*—preplex, confound, embarrass, pose bewilder, confuse, mystify. (Enlighten.)

QUACK—imposter, pretender, charlatan, empiric, mountebank. (Savant.)

QUAINT—artful, curious, far-fetched, fanciful, odd.

QUALIFIED—competent, fitted. (Incompetent.)

QUALITY—attribute, rank, distinction.

QUERULOUS — doubting, complaining, fretting, repining. (Patient.)

QUESTION—query, inquiry, interrogatory.

QUIBBLE—cavil, evade, equivocate, shuffle.

QUICK—lively, ready, prompt, alert, nimble, agile, active, brisk, expeditious, adroit, fleet, rapid, impetuous, swift, sweeping, dashing, clever. (Slow.)

QUOTE—note, repeat, cite, adduce.

RABID—mad, furious, raging, frantic. (Rational.)

RACE—course, match, pursuit, career, family, clan, house, ancestry, lineage, pedigree.

RACK—agonize, wring, torture, excruciate, harass, distress. (Soothe.)

RACY—spicy, pungent, smart, spirited, vivacious, lively. (Dull, insipid.)

RADIANCE—splendor, brightness, brilliance, brilliancy, lustre, glare. (Dullness.)

RADICAL—organic, innate, fundamental, original, constitutional, inherent, complete, entire. (Superficial. In a political sense, uncompromising; antonym, moderate.)

RANCID—fetid, rank, stinking, sour, tainted, foul. (Fresh, sweet.)

RANCOR—malignity, hatred, hostility, antipathy, animosity, enmity, ill-will, spite. (Forgiveness.)

RANK—order, degree, dignity, consideration.

RANSACK—rummage, pillage, overhaul, explore.

RANSOM—emancipate, free, unfetter.

RANT—bombast, fustian, cant.

RAPACIOUS—ravenous, voracious, greedy, grasping. (Generous.)

RAPT—ecstatic, transported, ravished, entranced, charmed. (Distracted.)

RAPTURE—ecstacy, transport, bliss. (Dejection.)

RARE—scarce, singular, uncommon, unique.

RASCAL—scoundrel, rogue, knave, vagabond.

RASH—hasty, precipitate, foolhardy, adventurous, heedless, reckless, careless. (Deliberate.)

RATE—value, compute, appraise, estimate, abuse.

RATIFY—confirm, establish, substantiate, sanction. (Protest, oppose.)

RATIONAL—reasonable, sagacious, judicious, wise, sensible, sound. (Unreasonable.)

RAVAGE—overrun, overspread, desolate, despoil.

RAVISH—enrapture, enchant, charm, delight.

RAZE—demolish, destroy, overthrow, dismantle, ruin. (Build up.)

REACH—touch, stretch, attain, gain, arrive at.

READY—prepared, ripe, apt, prompt, adroit, handy. (Slow, dilatory.)

REAL—actual, literal, practical, positive, certain, genuine, true. (Unreal.)

REALIZE—accomplish, achieve, effect, gain, get, acquire, comprehend.

REAP—gain, get, acquire, obtain.

REASON, *n.*—motive, design, end, proof, cause, ground, purpose.

REASON, *v.*—deduce, draw from, trace, conclude.

REASONABLE—rational, wise, honest, fair, right, just. (Unreasonable.)

REBELLION—insurrection, revolt.

RECANT—recall, abjure, retract, revoke.

RECEDE—retire, retreat, withdraw, ebb.

RECEIVE—accept, take, admit, entertain.

RECEPTION—receiving, levee, receipt, admission.

RECESS—retreat, depth, niche, vacation.

RECREATION—sport, pastime, play, amusement, game, fun.

REDEEM—ransom, recover, rescue, deliver, save.

REDRESS—remedy, repair, remission, abatement.

REDUCE—abate, lessen, decrease, lower, shorten.

REFINED—polite, courtly, polished, cultured, purified, genteel. (Boorish.)

REFLECT—consider, cogitate, think, muse, censure.

REFORM—amend, correct, better, restore, improve. (Corrupt.)

REFORMATION—improvement, reform, amendment. (Corruption.)

REFUGE—asylum, protection, harbor, shelter.

REFUSE, *v.*—deny, reject, repudiate, decline, withhold. (Accept.)

REFUSE, *n.*—dregs, dross, scum, rubbish, leavings.

REFUTE—disprove, falsify, negative. (Affirm.)

REGARD, *v.*—mind, heed, notice, behold, respect, view, consider.

REGRET, *n.*—grief, sorrow, lamentation, remorse.

REGULAR—orderly, uniform, customary, ordinary, stated. (Irregular.)

REGULATE—methodize, arrange, adjust, organize, govern, rule. (Disorder.)

REIMBURSE—refund, repay, satisfy, indemnify.

RELEVANT—fit, proper, suitable, appropriate, apt, pertinent. (Irrelevant.)

RELIANCE—trust, hope, dependence, confidence. (Suspicion.)

RELIEF—succor, aid, help, redress, alleviation.

RELINQUISH—give up, forsake, resign, surrender, quit, leave, forego. (Retain.)

REMEDY—help, relief, redress, cure, specific.

REMORSELESS—pitiless, relentless, cruel, ruthless, merciless, barbarous. (Merciful, humane.)

REMOTE—distant, far, secluded, indirect. (Near.)

REPRODUCE—propagate, imitate, represent, copy.

REPUDIATE—disown, discard, disavow, renounce, disclaim. (Acknowledge.)

REPUGNANT—antagonistic, distasteful. (Agreeable.)

REPULSIVE—forbidding, odious, ugly, disagreeable, revolting. (Attractive.)

RESPITE—reprieve, interval, stop, pause.

REVENGE—vengeance, retaliation, requital, retribution. (Forgiveness.)

REVENUE—produce, income, fruits, proceeds.

REVERENCE, *n.*—honor, respect, awe, veneration, deference, worship, homage. (Execration.)

REVISE—review, reconsider.

REVIVE—refresh, renew, renovate, animate, resuscitate, vivify, cheer, comfort.

RICH—wealthy, affluent, opulent, copious, ample, abundant, exuberant, plentiful, fertile, gorgeous, superb, fruitful. (Poor.)

RIVAL, *n.*—antagonist, opponent, competitor.

ROAD—way, highway, route, course, path, pathway, anchorage.

ROAM—ramble, rove, wander, stray, stroll.

ROBUST—strong, lusty, vigorous, sinewy, stalwart, stout, sturdy, able-bodied. (Puny.)

ROUT, *v.*—discomfit, beat, defeat, overthrow.

ROUTE—road, course, march, way, journey, path.

RUDE—rugged, rough, uncouth, unpolished, harsh, gruff, impertinent, saucy, flippant, impudent, insolent, saucy, churlish. (Polite, polished.)

RULE—sway, method, system, law, maxim, guide, precept, formula, regulation, government, test, standard.

RUMOR—hearsay, talk, fame, report, bruit.

RUTHLESS—cruel, savage, barbarous, inhuman, merciless, remorseless, relentless. (Considerate.)

SACRED—holy, hallowed, divine, consecrated, dedicated, devoted. (Profane.)

SAFE—secure, harmless, trustworthy. (Perilous.)

SANCTION—confirm, countenance, encourage, support, ratify, authorize. (Disapprove.)

SANE—sober, lucid, sound, rational. (Crazy.)

SAUCY—impertinent, rude, impudent, insolent, flippant, forward. (Modest.)

SCANDALIZE—shock, disgust, offend, calumniate, vilify, revile, malign, traduce, defame, slander.

SCANTY—bare, pinched, insufficient, slender, meager. (Ample.)

SCATTER—strew, spread, disseminate, disperse, dissipate, dispel. (Collect.)

SECRET—clandestine, concealed, hidden, sly, underhand, latent, private. (Open.)

SEDUCE—allure, attract, decoy, entice, abduct, inveigle, deprave.

SENSE—discernment, appreciation, view, opinion, feeling, perception, sensibility, susceptibility, significance, thought, judgment, signification, meaning, import, purport, wisdom.

SENSIBLE—wise, intelligent, reasonable, sober, sound, conscious, aware. (Foolish.)

SETTLE—arrange, adjust, regulate, conclude.

SEVERAL—sundry, divers, various, many.

SEVERE—harsh, stern, stringent, unmitigated, unyielding, rough. (Lenient.)

SHAKE—tremble, shudder, shiver, quake, quiver.

SHALLOW — superficial, flimsy, slight. (Deep, thorough.)

SHAME—disgrace, dishonor. (Honor.)

SHAMEFUL—degrading, scandalous, disgraceful, outrageous. (Honorable.)

SHAMELESS—immodest, impudent, indecent, indelicate, brazen.

SHAPE—form, fashion, mold, model.

SHARE—portion, lot, division, quantity, quota.

SHARP—acute, keen. (Dull.)

SHINE—glare, glitter, radiate, sparkle.

SHORT—brief, concise, succinct, summary. (Long.)

SHOW, *n.*—exhibition, sight, spectacle.

SICK—diseased, sickly, unhealthy. (Healthy.)

SICKNESS—illness, indisposition, disease, disorder. (Health.)

SIGNIFICANT, *a.*—expressive, material, important. (Insignificant.)

SIGNIFICATION—import, meaning, sense.

SILENCE—speechlessness, dumbness. (Noise.)

SILENT—dumb, mute, speechless. (Talkative.)

SIMILE—comparison, similitude.

SIMPLE—single, uncompounded, artless, plain. (Complex, compound.)

SIMULATE—dissimulate, dissemble, pretend.

SINCERE—candid, hearty, honest, pure, genuine, real. (Insincere.)

SITUATION—condition, plight, predicament, state.

SIZE—bulk, greatness, magnitude, dimension.

SLAVERY — servitude, enthrallment, thralldom. (Freedom.)

SLEEP—doze, drowse, nap, slumber.

SLEEPY—somnolent. (Wakeful.)

SLOW—dilatory, tardy. (Fast.)

SMELL—fragrance, odor, perfume, scent.

SMOOTH—even, level, mild. (Rough.)

SOAK—drench, imbrue, steep.

SOCIAL—sociable, friendly, communicative. (Unsocial.)

SOFT—gentle, meek, mild. (Hard.)

SOLICIT—importune, urge.

SOLITARY—sole, only, single.

SORRY—grieved, poor, paltry, insignificant. (Glad, respectable.)

SOUL—mind, spirit. (Soul is opposed to body, mind to matter.)

SOUND, *a.*—healthy, sane. (Unsound.)

SOUND, *n.*—tone, noise, silence.

SPACE—room.

SPARSE—scanty, thin. (Luxuriant.)

SPEAK—converse, talk, confer, say, tell.

SPECIAL—particular, specific. (General.)

SPEND—expend, exhaust, consume, waste, dissipate. (Save.)

SPORADIC—isolated, rare. (General, prevalent.)

SPREAD—disperse, diffuse, expand, disseminate.

SPRING—fountain, source.

STAFF—prop, support, stay.

STAGGER—reel, totter.

STAIN—soil, discolor, spot, sully, tarnish.

STATE—commonwealth, realm.

STERILE—barren, unfruitful. (Fertile.)

STIFLE—choke, suffocate, smother.

STORMY—rough, boisterous, tempestuous. (Calm.)

STRAIGHT—direct, right. (Crooked.)

STRAIT, *a.*—narrow, confined.

STRANGER—alien, foreigner. (Friend.)

STRENGTHEN—fortify, invigorate. (Weaken.)

STRONG—robust, sturdy, powerful. (Weak.)

STUPID—dull, foolish, obtuse, witless. (Clever.)

SUBJECT—exposed to, liable, obnoxious. (Exempt.)

SUBJECT — inferior, suborbinate. (Superior to, above.)

SUBSEQUENT—succeeding, following. (Previous.)

SUBSTANTIAL—solid, durable. (Unsubstantial.)

SUIT—accord, agree. (Disagree.)

SUPERFICIAL—flimsy, shallow, untrustworthy. (Thorough.)

SUPERFLUOUS—unnecessary. (Necessary.)

SURROUND—encircle, encompass, environ.

SUSTAIN—maintain, support.

SYMMETRY—proportion.

SYMPATHY—commiseration, compassion.

SYSTEM—method, plan, order.

SYSTEMATIC — orderly, regular, methodical. (Chaotic.)

TAKE—accept, receive. (Give.)

TALKATIVE—garrulous, loquacious, communicative. (Silent.)

TASTE—flavor, relish, savor. (Tastelessness.)

TAX—custom, duty, impost, excise, toll.

TAX—assessment, rate.

TEASE—taunt, tantalize, torment, vex.

TEMPORARY, *a.*—fleeting, transient, transitory. (Permanent.)

TENACIOUS—pertinacious, retentive.

TENDENCY—aim, drift, scope.

TENET—position, view, conviction, belief.

TERM—boundary, limit, period, time.

TERRITORY—dominion.

THANKFUL—grateful, obliged. (Thankless.)

THANKLESS—ungracious, profitless, ungrateful, unthankful.

THAW—melt, dissolve, liquefy. (Freeze.)

THEATRICAL—dramatic, showy, ceremonious.

THEFT—robbery, depredation, spoliation.

THEME—subject, topic, text, essay.

THEORY—speculation, scheme, plea, hypothesis, conjecture.

THEREFORE—accordingly, consequently, hence.

THICK—dense, close, compact, solid, coagulated, muddy, turbid, misty, vaporous. (Thin.)

THIN—slim, slender, slight, flimsy, lean, scraggy, attenuated.

THINK—cogitate, consider, reflect, ponder, muse, contemplate, meditate, conceive, fancy, imagine, apprehend, hold, esteem, reckon, consider, deem, regard, believe, opine.

THOROUGH—accurate, correct, trustworthy, complete, reliable. (Superficial.)

THOUGHT—idea, conception, imagination, fancy, conceit, notion, supposition, care, provision, consideration, opinion, view, sentiment, reflection, deliberation.

THOUGHTFUL—considerate, careful, cautious, heedful, contemplative, reflective, provident, pensive, dreamy. (Thoughtless.)

THOUGHTLESS—inconsiderate, rash, precipitate, improvident, heedless.

TIE, *v.*—bind, restrain, restrict, oblige, secure, join, unite. (Loose.)

TIME—duration, season, period, era, age, date, span, spell.

TOLERATE—allow, admit, receive, suffer, permit, let, endure, abide. (Oppose.)

TOP—summit, apex, head, crown, surface. (Base, bottom.)

TORRID—burning, hot, parching, scorching.

TORTUOUS—twisted, winding, crooked, indirect.

TORTURE—torment, anguish, agony.

TOUCHING—tender, affecting, moving, pathetic.

TRACTABLE—docile, manageable, amenable.

TRADE—traffic, commerce, dealing, occupation, employment, office.

TRADITIONAL—oral, uncertain, transmitted.

TRAFFIC—trade, exchange, commerce.

TRAMMEL, *n.*—fetter, shatter, clog, bond, impediment, chain, hindrance.

TRANQUIL—still, unruffled, peaceful, hushed, quiet. (Noisy, boisterous.)

TRANSACTION—negotiation, occurrence, proceeding, affair.

TRAVEL—trip, peregrination, excursion, journey, tour, voyage.

TREACHEROUS—traitorous, disloyal, treasonable, faithless, false-hearted. (Trustworthy, faithful.)

TRITE—stale, old, ordinary, commonplace, hackneyed. (Novel.)

TRIUMPH—achievement, ovation, victory, jubilation, conquest. (Failure, defeat.)

TRIVIAL—trifling, petty, small, frivolous, unimportant, insignificant. (Important.)

TRUE—genuine, actual, sincere, unaffected, true-hearted, honest, upright, veritable, real, veracious, authentic, exact, accurate, correct.

TUMULTUOUS—turbulent, riotous, disorderly, disturbed, confused, unruly. (Orderly.)

TURBID—foul, thick, muddy, impure, unsettled.

TYPE—emblem, symbol, figure, sign, kind, letter.

TYRO—novice, beginner, learner.

UGLY—unsightly, plain, homely, ill-favored, hideous. (Beautiful.)

UMBRAGE—offense, dissatisfaction, resentment.

UMPIRE—referee, arbitrator, judge, arbiter.

UNANIMITY—accord, agreement, unity, concord. (Discord.)

UNBRIDLED—wanton, licentious, dissolute, loose.

UNCERTAIN—doubtful, dubious, questionable, fitful, equivocal, ambiguous, indistinct, fluctuating.

UNCIVIL—rude, discourteous, disrespectful, disobliging. (Civil.)

UNCLEAN—dirty, foul, filthy, sullied. (Clean.)

UNCOMMON—rare, strange, scarce, singular, choice. (Common, ordinary.)

UNCONCERNED—careless, indifferent, apathetic. (Anxious.)

UNCOUTH—strange, odd, clumsy. (Graceful.)

UNCOVER—reveal, strip, expose, lay bare. (Hide.)

UNDER—below, underneath, beneath, subordinate, lower, inferior. (Above.)

UNDERSTANDING—knowledge, intellect, intelligence, faculty, comprehension, mind, reason.

UNDO—annul, frustrate, untie, unfasten, destroy.

UNEASY—restless, disturbed, unquiet, awkward, stiff. (Quiet.)

UNEQUAL—uneven, not alike, irregular. (Even.)

UNEQUALED—matchless, unique, novel, new.

UNFIT, *a.*—improper, unsuitable, inconsistent, untimely, incompetent. (Fit.)

UNFIT, *v.*—disable, incapacitate, disqualify. (Fit.)

UNFORTUNATE—calamitous, ill-fated, unlucky, wretched, unhappy, miserable. (Fortunate.)

UNGAINLY—clumsy, awkward, lumbering, uncouth. (Pretty.)

UNHAPPY—miserable, wretched, distressed, painful, afflicted, disastrous, drear, dismal. (Happy.)

UNIFORM—regular, symmetrical, equal, even, alike, unvaried. (Irregular.)

UNINTERRUPTED—continuous, perpetual, unceasing, incessant, endless. (Intermittent.)

UNION—junction, combination, alliance, confederacy, league, coalition, agreement. (Disunion.)

UNIQUE—unequal, uncommon, rare, choice, matchless. (Common, ordinary.)

UNITE—join, conjoin, combine, concert, add, attach. (Separate, disrupt, sunder.)

UNIVERSAL—general, all, entire, total, catholic. (Sectional.)

UNLIMITED—absolute, undefined, boundless, infinite. (Limited.)

UNREASONABLE—foolish, silly, absurd, preposterous, ridiculous.

UNRIVALED—unequaled, unique, unexampled, incomparable, matchless. (Mediocre.)

UNRULY—ungovernable, unmanageable, refractory. (Tractable, docile.)

UNUSUAL—rare, unwonted, singular, uncommon, remarkable, strange. (Common.)

UPHOLD—maintain, defend, sustain, support, vindicate. (Desert, abandon.)

UPRIGHT — vertical, perpendicular, erect, just, equitable, fair, pure, honorable. (Prone.)

UPRIGHTNESS—honesty, integrity, fairness, goodness, probity, virtue, honor. (Dishonesty.)

URGE—incite, impel, push, drive, instigate, stimulate, press, induce, solicit.

URGENT—pressing, imperative, immediate, serious, wanted. (Unimportant.)

USAGE—custom, fashion, practice, prescription.

USE, *n.* — usage, practice, habit, custom, avail, advantage, utility, benefit, application. (Disuse.)

USUAL—ordinary, common, accustomed, habitual, wonted, customary, general. (Unusual.)

UTMOST—farthest, remotest, uttermost, greatest.

UTTER, *a.*—extreme, excessive, sheer, mere, pure.

UTTER, *v.*—speak, articulate, pronounce, express.

UTTERLY—totally, completely, wholly, altogether.

VACANT—empty, unfilled, unoccupied, thoughtless, unthinking. (Occupied.)

VAGRANT, *n.*—wanderer, beggar, tramp, rogue.

VAGUE—unsettled, undetermined, pointless, uncertain, indefinite. (Definite.)

VAIN—useless, fruitless, empty, worthless, inflated, proud, conceited, unreal. (Effectual, humble.)

VALIANT—brave, bold, valorous, courageous, gallant. (Cowardly.)

VALID—weighty, strong, powerful, sound, binding, efficient. (Invalid.)

VALOR — courage, gallantry, boldness, bravery, heroism. (Cowardice.)

VALUE, *v.*—appraise, assess, reckon, appreciate, estimate, prize, esteem, treasure. (Despise,)

VARIABLE — changeable, unsteady, inconstant, shifting, wavering, fickle, restless. (Constant.)

VARIETY—difference, diversity, change, diversification, mixture, medley, miscellany. (Sameness, monotony.)

VAST—spacious, boundless, mighty, enormous, immense, colossal, gigantic, prodigious. (Confined.)

VAUNT—boast, brag, puff, hawk, advertise, parade.

VENERABLE—grave, sage, wise, old, reverend.

VENIAL—pardonable, excusable, justifiable. (Serious, grave.)

VENOM—poison, virus, spite, malice, malignity.

VENTURE, *n.*—speculation, chance, peril, stake.

VERACITY—truth, truthfulness, credibility, accuracy. (Falsehood.)

VERBAL—oral, spoken, literal, parole, unwritten.

VERDICT—judgment, finding, decision, answer.

VEXATION—chagrin, mortification. (Pleasure.)

VIBRATE—oscillate, swing, sway, wave, thrill.

VICE—vileness, corruption, depravity, pollution, immorality, wickedness, guilt, iniquity. (Virtue.)

VICIOUS—corrupt, depraved, debased, bad, unruly, contrary, demoralized, profligate, faulty. (Gentle, virtuous.)

VICTIM—sacrifice, food, prey, sufferer, dupe, gull.

VICTUALS—viands, bread, meat, provisions, fare, food, repast.

VIOLENT—boisterous, furious, impetuous, vehement. (Gentle.)

VIRTUOUS—upright, honest, moral. (Profligate.)

VISION—apparition, ghost, phantom, specter.

VOLUPTUARY—epicure, sensualist.

VOUCH—affirm, asserverate, assure, aver.

WAIT—await, expect, look for, wait for.

WAKEFUL—vigilant, watchful. (Sleepy.)

WANDER—range, ramble, roam, rove, stroll.

WANT—lack, need. (Abundance.)

WARY—circumspect, cautious. (Foolhardy.)

WASH—clean, rinse, wet, moisten, stain, tint.

WASTE, *v.*—squander, dissipate, lavish, destroy, decay, dwindle, wither.

WAY—method, plan, system, means, manner, mode, form, fashion, course, process, road, route, track, path, habit, practice.

WEAKEN—debilitate, enfeeble, enervate, invalidate. (Strengthen.)

WEARY—harass, jade, tire, fatigue. (Refresh.)

WEIGHT — gravity, heaviness, burden, load. (Lightness.)

WELL-BEING—happiness, prosperity, welfare.

WHOLE—entire, complete, total, integral. (Part.)

WICKED—iniquitous, nefarious. (Virtuous.)

WILL—wish, desire.

WILLINGLY—spontaneously, voluntarily. (Unwillingly.)

WIN—get, obtain, gain, procure, effect, realize, accomplish, achieve. (Lose.)

WINNING—attractive, charming, fascinating, bewitching, enchanting, dazzling. (Repulsive.)

WISDOM — prudence, foresight, far-sightedness, sagacity. (Foolishness.)

WONDER, *v.*—admire, amaze, astonish, surprise.

WONDER, *n.*—marvel, miracle, prodigy.

WRONG—injustice, injury. (Right.)

YAWN—gape, open wide.

YEARN—hanker after, long for, desire, crave.

YELL—bellow, cry out, scream.

YELLOW—golden, saffron-like.

YELP—bark, sharp cry, howl.

YET—besides, nevertheless, notwithstanding, however, still, ultimately, at last, so far, thus far.

YIELD—bear, give, afford, impart, communicate, confer, bestow, abdicate, resign, cede, surrender.

YIELDING—supple, pliant, bending, compliant, submissive, unresisting. (Obstinate.)

YOKE, *v.*—couple, link, connect.

YORE—long ago, long since.

YOUTH—boy, lad, minority, adolescence.

YOUTHFUL—juvenile, puerile. (Old.)

ZEAL—energy, fervor, ardor, earnestness, enthusiam, eagerness. (Indifference.)

ZEALOUS—warm, ardent, fervent, enthusiastic, anxious. (Indifferent, careless.)

ZEST—relish, gusto, flavor. (Disgust.)

COURTSHIP ...AND.... MARRIAGE

OUR capacity to love and awaken this tender passion, is as much a gift, a real genius, as any other; and the basis of all conjugal excellence. On it rests the entire superstructure of wedlock. Out of it, like limbs and fruit from their trunk, grow all marital virtues and enjoyments. Its full and perfect action perfectly fulfils them all. They are complete when its action is perfect, but incomplete when it is weak.

Those in whom it is vigorous and normal, cannot make poor husbands or wives, though faulty in other respects; nor those good ones in whom it is deficient, however many or great their excellences. The former are always extra fond, loving, doting, devoted, and happy in wedlock when fond at all, yet when antagonistic, become the more so the better it is developed; for, like a two-edged sword, it cuts fearfully, the wrong way when it does not cut the right.

Love is stronger in some, and weaker in others. As some excel in one gift, yet lack another, are good in music but poor in figures, etc.; so this loving, lovable capacity is strong in some but weak in others. The difference between different persons in this respect is indeed heaven-wide. Those in whom it is large and normal, instinctively make good husbands or wives without effort; yet those who lack it make poor ones, though they try their best. A man ever so industrious, steady, provident, liberal, pious, moral, intelligent, if this faculty is weak, is only a poor, commonplace husband, unloving and unloved; comparatively soulless, withered, barren, indifferent, cold-hearted, rigid, uncouth, and cares little for woman in general, or wife in particular, and is cared little for by either; while he in whom it is hearty and normal, is rich in conjugal affection.

Noble Men and Women.

He loves woman in general, and wife in particular, which both awakens their love, and teaches him instinctively just how to comport himself toward both. He is all warmth, glowing and rich in all the masculine attributes; while he in whom it is deficient is unmanned, emasculated in soul and body, and proportionally worthless as a husband.

A woman whose love is weak, is cold,

spiritless, passive, tame and barren in all the feminine attractions and virtues; half dead and alive; like leather as compared with skin, having the female groundwork, but lacking its life and soul; may indeed be a great worker and a good housekeeper; the kindest and best of neighbors; refined, proper and much besides; but will be barren in womanliness, and therefore lack this "one thing needful" in conjugality, this very heart's core of female nature, and the lovable wife. Though good in all other respects, yet as a wife proper she is proportionally good for nothing. "I would as soon marry a post as her," said a well-sexed man of an extra nice, refined, intellectual, squeamish, unmarried woman of thirty, in whom this faculty was wanting.

Love and Marriage.

In all who are indifferent to marriage this faculty is feeble and *vice versa*. It may be naturally strong, yet temporarily weakened by physical debility, or sexual impairments, or surfeited, or deadened by early errors, or disappointed love. Yet this alone is the marrying and marriageable element, all else being subservient to this great prerequisite.

Expect an insipid marriage if it is feeble in yourself or companion; and that minor differences will alienate you, where hearty love would harmonize. Yet to those who marry for station, home or money, it is less important.

All hail this love element, this conjugal inspiration and gift. So far from being mean, low-lived, sensualizing, it takes its dignified rank among the human capacities. Its *perversion* alone is despicable; yet so is that of all the others. As worship is self-exalting when rightly exercised, yet degrades when perverted to idolatry; so perverted love creates the vilest of the vices; yet no human virtue is more praiseworthy, purifying or elevating than its proper exercise; and when powerful and normal, becomes a real genius, and as much to be prized and cultivated as a talent for invention, poetry, oratory, logic. As we honor a gifted musician much, why not a prime husband or wife more? Is not love as great a human endowment as reason, and as useful? Then why not honor and nurture it as much more as its end is more indispensable?

A Peerless Passion.

How infinitely glorious this loving, lovable capacity! What sacrifices for its object it inspires! What faults it hides! What virtues it develops! What other felicity equals it? What ecstasy as ecstatic? What a zest it imparts to every other life function and enjoyment! What joy in being loved! Girl, you little realize the intrinsic worth of that tender regard for you existing in your lover's soul, or you would not trifle with it. No emotion, not even worship, is any more sacred.

Ye who have never loved stand aside, for novices are counted out; as are ye who have loved only indifferently. But all ye who have loved *heartily*, was not that love-season your most sacred life-epoch? Were you not regenerated by it? To love and be loved tamely, passively, is something; but to love and be loved with a whole-souled and a *powerful* affection, is life's most luxurious and delicious feast perpetually served up. Have and prize musical gift, poetical talent, or any other you may possess; but to whatsoever other gift I possess let me superadd an intense, a dotingly-devoted *love-nature*, and a lovable object. Be rich, yet unloving, if you will, but let *me* be affectionate though poor. Give me a clear head along with a warm heart, yet if but one, the warm, doting, loving heart first.



THE LOVER'S DAY DREAMS.

Love! How inexpressibly sacred! Less so than divine worship only. What other human emotion except divine worship penetrates quite as deeply into the very rootlets and soul of human existence as does this tender sentiment? For what does a man "launch out" so freely as to the devoted, affectionate, responsive wife whom he loves so tenderly and devotedly? All human experience concurs in pronouncing this "man's grand master-passion." Say, all ye who have ever loved—and who that has reached maturity but has—what *one* sentiment ever struck away down into the very depths of your innermost consciousness as did this holy sentiment.

Take that dashing, heartless beauty to your home and heart ye who will, but give me one brimful of love and devotion, even though less handsome, and if I must be enraptured, let it be in my devotion to my conjugal partner. Let memory decline, finance and ambition wane; but, oh, let *affection* die last, and "live again" first, and be forever completely intertwined with one who loves with equal devotion.

Ah, now, in youth, how beautiful,
  Is the enchanted land!
What matchless flowers my hand doth cull
  Within its haunted strand!
What gorgeous visions spread the wing
  Amid its twilight shades;
And oh! what shapes go, beckoning,
  Along its moonlit glades!
The dewy showers and silver gleams
That sweeten all the land of dreams!

The Temperaments

IN order to prepare the reader fully to comprehend and appreciate the important practical details which follow, it is necessary to describe the different temperaments. When we compare man with the other animals, we observe that he is distinguished by characteristic features which do not permit us, for a moment, to confound him with any of them; and when we compare man with man, we are struck by the no less obvious fact, that there exists between individuals differences analogous to those which mark the different species. One is tall and muscular, another short and plump, a third small and slender. We observe, also, that the functions of life are not performed in all with the same degree of force or rapidity, and that their likes and dislikes have neither the same direction nor the same intensity.

These differences are the result and indication of what we call temperament, which is defined as the peculiar physical and mental character of an individual.

In their last analysis, the temperaments are as numerous and varied as the individuals of the race, no two persons being found with precisely the same physical constitution. Tracing them back to their simpler forms, however, we shall find them all to result from the almost infinite combinations of a few simple elements.

The human body is composed of three grand classes or systems of organs, each of which has its special function in the general economy. These are:

1. The Motive or Mechanical System,
2. The Vital or Nutritive System, and—
3. The Mental or Nervous System.

On this basis rests the true doctrine of the temperaments, of which there are primarily

three, corresponding with the three systems of organs just named. We call them:

1. The Motive Temperament,
2. The Vital Temperament, and—
3. The Mental Temperament.

It is the predominance of the class of organs from which it takes its name that determines each of these temperaments. Thus the first is marked by the superior development of the osseous and muscular systems, forming the



MOTIVE-VITAL TEMPERAMENT.

Bones, muscles and joints large and strong; vitality abundant; the whole structure indicating firmness, toughness, energy and activity; perceptions clear; sound in judgment and quick in decision; admirably adapted to all out-door activities and pursuits.

locomotive apparatus; in the second, the vital organs, the principal seat of which is in the trunk, give the tone to the organization; and in the third, the brain and nervous system exert the controlling power.

The simple or primary temperaments are, however, practically, little better than abstractions; but they serve as points of departure from which to arrive at their various combinations.

I.—THE MOTIVE TEMPERAMENT.

The bony framework of the human body determines its general configuration, which is modified in its details by the muscular fibers and cellular tissues which overlay them. In the motive temperament the bones are proportionately large, and generally long rather than broad, and the outlines of the form manifest a tendency to angularity. The muscles are well developed, but only moderately rounded, and correspond in form with the bones.

The figure is commonly tall, elegant and striking; the face oblong; the neck rather long; the shoulders broad and definite; the chest moderate in size and fulness; the abdomen proportional; and the limbs long and tapering. The complexion and eyes are generally, but not always, dark, and the hair dark, strong and abundant. Firmness of texture characterizes all the organs.

Strong Characters.

Men of this temperament are naturally vigorous, active, energetic and impassioned, and possess strongly marked, if not idiosyncratic, characters. They manifest great capacity for conception, receiving and combining rapidly many and varied impressions, and are constantly carried away, bearing others with them, by the torrent of their imagination and passions. They are leaders, rulers and conquerors in the sphere in which they move. This is the temperament for rare talents, great works, great errors, great faults and great crimes.

The motive temperament was the prevailing one, apparently, among the ancient Romans. An aquiline nose, great ambition and an insatiable love of power and conquest very frequently accompany it.

In a woman of this temperament the bosom is only moderately developed, the

waist remarkable for its fine proportions, the haunches not very broad, the limbs elegantly formed and indicative of agility and lightness.

The Diana of Grecian sculpture furnishes a fine classic representation of this type of feminine beauty.

Helen of Troy, according to the descriptions we have of her, must have been of this temperament; for we are told that she was tall, and that she had "a very long and white neck, whence she was said to be the daughter of a swan."

Rounded Plumpness.

The motive temperament, in its typical form, is less proper to woman than to man; but we may note two or three modifications of it which constitute the more feminine phases:

The first is that in which the bones, except those of the pelvis, are proportionately small, which gives the figure additional delicacy and grace. This conformation, while it adds to the beauty of the female figure, detracts from the strength and consequently from the beauty of the masculine form.

The second is that in which the development of the ligaments and the articulations which they form are proportionately small, which adds to the beauty of the female figure by correcting the tendency to angularity and abrupt bendings which, as we have seen, is characteristic of this temperament, and rounding and softening the contour of the joints. This will be practically apparent in the wrists and ankles.

The third is that which presents proportionally shorter bones, and, except around the pelvis, smaller and more rounded muscles, affording less strongly marked reliefs and more of that rounded plumpness essential to the highest beauty in woman.

An abnormal development of the motive temperament, in which both the vital and the mental systems are sacrificed to mere animal strength, forms what the ancients called the athletic temperament. It is marked by a head proportionately small, especially in the coronal region; a thick neck; broad shoulders; expanded chest; and strongly marked muscles, the tendons of which are apparent through the skin.



MENTAL TEMPERAMENT.

Features delicately cut; countenance very expressive; hair fine and soft; eyes brilliant and penetrating; figure graceful, rather than imposing; muscles small and compact, adapted to rapid action rather than strength; the whole structure distinguished for fineness and delicacy.

The Farnese Hercules furnishes a model of the physical attributes of this abnormal constitution, in which brute force usurps the energies necessary to the production of thought, and leaves its possessor decidedly deficient in all the higher mental manifestations. This temperament does not occur so frequently in women. They present a marked contrast to the brute force and dull sensibilities of the mere animal.

II.—THE VITAL TEMPERAMENT.

As this temperament depends upon the predominance of the vital or nutritive organs which occupy the great cavities of the trunk, it is necessarily marked by a breadth and thickness of body proportionately greater, and a stature and size of limbs proportionately less than in the motive temperament. Its most striking physical characteristic is



VITAL TEMPERAMENT.

Stature above the medium; chest broad; face full and limbs well rounded; expression lively, frank and good-natured; may have complexion either light or dark; fond of good living, play and out-door life; social affections strong.

rotundity or plumpness. The face inclines to roundness; the neck is rather short; the shoulders broad and round; the chest full; the abdomen well developed; the arms and legs plump, but tapering and delicate, and terminating in hands and feet relatively small. The complexion is generally rather florid; the countenance smiling; the eyes blue; and the hair soft, light and abundant.

In a woman of this temperament (which seems peculiarly the temperament of woman) the shoulders are softly rounded, and owe any breadth they may possess rather to the expanded chest containing these organs, than to the bony or muscular size of the shoulders themselves; the bosom, a vital organ, in its luxuriance seems laterally to protrude on the space occupied by the arms; the waist, though sufficiently marked, is, as it were, encroached on by that plumpness of all the contiguous parts which the powerful nutritive system affords; the locomotive organs, the limbs and arms, tapering and becoming delicate, terminate in feet and hands which, compared with the ample trunk, are peculiarly small; the complexion, depending upon nutrition, has the rose and lily so exquisitely blended that we are surprised it should defy the usual operation of the elements; and there is a luxuriant profusion of soft and fine flaxen or auburn hair. The whole figure is soft and voluptuous in the extreme.

Arts of Oriental Women.

Such forms and faces have had more numerous admirers than those of any other style, and enter into almost every description of beauty in the works of both Asiatic and European writers. Americans are said to be the only people who manifest a decided passion for slenderness. The arts which women have practiced in order to acquire the desired plumpness are detailed at length by various writers. Camus tells us that the women of Egypt were wont to bathe themselves several days in lukewarm water, eating and drinking while in the bath. The Empress Theodora also "made abundant use of the bath, remaining in it long, and leaving it only to eat and rest in bed, during the greater part of the day and night," to increase her *plumpness* and heighten her charms.

Persons of this temperament are charac-

terized mentally by activity, ardor, impulsiveness, enthusiasm, versatility, and sometimes by fickleness. They have more elasticity than firmness, more diligence than persistence, more brilliancy than depth. They are frequently violent and passionate, but are as easily calmed as excited; are generally cheerful and amiable, and almost always very companionable and fond of good living.

An undue and abnormal preponderance of the absorbent system and a sluggish action of the circulatory organs give rise to what has been called the lymphatic temperament, which presents forms even more rounded and softer than those we have been describing, but lacking their well-defined and graceful outlines. A feeble color of the skin, a lack of expression in the countenance, insurmountable sloth, and a general weakness and apathy, both of body and mind characterize this state of the system, which is so evidently the result of disease that we see no propriety in setting it down as one of the natural temperaments. When perfect health shall have become universal, we shall have no lymphatic people, and no lazy ones.

III.—THE MENTAL TEMPERAMENT.

The mental temperament, depending upon the predominance of the brain and nervous system, is characterized by a slight frame, and a head relatively large and of a pyriform appearance. The face is generally oval; the forehead high and pale; the features delicate and finely chiseled; the eye bright and expressive; the hair fine, soft, not abundant, and commonly of a light color; the neck slender; the chest rather narrow; the limbs small; and the whole figure delicate and graceful rather than striking or elegant. In woman, the bosom and pelvis are only moderately expanded, and there is a decided lack of that rounded fullness which characterizes the vital temperament.

The face of Dusé, the famous Italian actress, is particularly fine, and no ideal can express, in general contours, more intellectuality. The following brief but graphic description of the great Queen of Tragedy, as she appeared on the stage in New York is a correct picture of her:

"Pale, with jet-black hair, a small, regular nose, a mouth mobile enough, but rather sweet in its expression and tender in its lines



MENTAL-VITAL TEMPERAMENT.

Well-proportioned form; eyes large and expressive; a happy combination of mental and bodily activity; features regular and expressing intelligence, sympathy and sincerity. A fine type of all womanly grace and attractiveness.

for the heroine of tragedy, and a large forehead quite protruding itself over the straight, black brows that shadow her wondrous eyes, she is the very embodiment of feminine intellect. Her figure is slight, and her mental entirely dominates her vital system; but her limbs, with all their delicacy, have a firm look, and she is rather lithe than fragile. The fall of her drapery would make any sculptor despair, did he not see that itself is but the reproduction in tissue of lines into which the Grecian sculptors wrought their marble."

In some of her plays, however, she dresses like a peasant girl, and utterly ignores all the graces of drapery.

In persons of the mental temperament, the brain and the nervous system are active, the thoughts quick, the senses acute, and the imagination lively and brilliant. It is the literary and artistic, and especially the poetic, temperament, of which Byron, Shelley, Keats, and Poe furnished good examples.

There is at the present day, and in this



MOTIVE-MENTAL TEMPERAMENT.

Thinker and worker; practical, pushing, ambitious, thorough, forcible; physique tough and wiry, rather than stout and commanding; in many respects the typical American. Men distinguished in every pursuit possess this temperament to a greater or less degree.

country, an excessive and morbid development of this temperament, especially among women (to whom, even in its normal predominance, it is less proper than the preceding), which is most inimical to health, longevity, and happiness. It answers to the nervous temperament of the old classification, and is characterized by the smallness and emaciation of the muscles, the quickness and intensity of the sensations, the suddenness and fickleness of the determinations, and a morbid impressibility.

It is caused by sedentary habits; lack of exercise; a false system of education, inducing a premature and disproprionate development of the brain; the immoderate use of tea, coffee and tobacco; and habits of sensual indulgence.

The three primary temperaments combining with each other in different proportions, and being modified by various causes, form sub-temperaments innumerable, presenting differences and resemblances depending upon the relative proportions of the primitive elements. The simplest combinations of which the three primary temperaments are susceptible, give us six sub-temperaments, which may be designated as—

1. The Motive-Vital Temperament,
2. The Motive-Mental Temperament,
3. The Vital-Motive Temperament,
4. The Vital-Mental Temperament,
5. The Mental-Motive Temperament, and
6. The Mental-Vital Temperament.

The Proper Balance.

The names of these compound temperaments sufficiently indicate their character. The motive-vital and the vital-motive differ but slightly, the name placed first in either case indicating the element which exists in the larger proportion. The same remark applies to the motive-mental and the mental-motive, and to the vital-mental and the mental-vital.

It is evident that perfection of constitution must consist in a proper balance of temperaments. If any one of them exists in great excess, the result is necessarily a departure from symmetry and harmony both of form and character. Whatever, therefore, has a tendency to promote the disproportionate development of either of them should be carefully avoided.

Each person is born with a particular tem-

perament, in which there is an inherent tendency to maintain and increase itself, since it gives rise to habits which exercise and develop it; but this tendency may be counteracted and changed entirely by external circumstances—by education, occupation, superinduced habits, climate, etc., and more particularly by special training instituted for that purpose.

Dr. George Combe, in one of his valuable works, points out the important changes produced in the temperament by a continued course of training. "It is common," he says, "for the motive to be changed into the mental temperament by habits of mental activity and close study; and, on the other hand, we often see the nervous or bilious changed into the lymphatic or vital about the age of forty, when the nutritive system seems to acquire the preponderance."

Spurzheim was accustomed to say that he had originally a large portion of the lymphatic temperament, as had all his family; but that in himself the lymphatic had gradually diminished, and the nervous increased; whereas, in his sisters, owing to mental inactivity, the reverse had happened, and when he visited them, after being absent many years, he found them, to use his own expression, "as large as tuns."

What Temperaments Should and Should Not Marry

SINCE few have well-balanced heads or bodies, most require to marry their opposites in one or more respects. Almost all have too much brain for body, or body for brain; or else too much or too little respiration, or digestion, or circulation, or muscle, for their other physical functions.

Those who are medium in complexion, stature, etc., who are neither extra dark nor light, large nor small, tall nor short, lean nor fat, may marry those who are medium, or nearly like themselves in these respects, or in either extreme, or a little more or less so than themselves. Thus, those whose hair is neither dark nor light, but about midway between both, may marry those who are a shade darker, or lighter, than themselves, or a good deal darker or lighter, or even jet black or bright red, as they may fancy, or as other circumstances may favor most, the complexion being not especially material; yet the darker one is, the lighter his or her companion should be.

Bright red hair should marry jet black, and jet black auburn, or bright red. And the more red-faced and bearded or impulsive a man, the more dark, calm, cool, and quiet should his wife be; and *vice versa*. The florid should not marry the florid, but those who are dark in proportion as they themselves are light.

Red-whiskered men should marry brunettes but not blondes; the color of the whiskers being more determinate of the temperament than that of the hair.

The color of the eyes is still more important. Gray eyes must marry some other color, almost any other, except gray; and so of blue, dark, hazel, etc.

Those very fleshy should not marry those equally so, and this remember, is doubly true of females. A spare man is much better adapted to a fleshy woman than a round-favored man. Two who are short, thick-set and stocky should not unite in marriage, but should choose those differently constituted; but on no account one of their own make. And, in general, those predisposed to corpulence are therefore less inclined to marriage.

Whom Nervous People Should Marry.

Those with little hair or beard should marry those whose hair is naturally abundant; still, those who once had plenty, but who have lost it, may marry those who are either bald or have but little; for in this, as in all other cases, all depends on what one is by *nature*, little on present states.

Those whose motive-temperament decidedly predominates, who are bony, only moderately fleshy, quite prominent-featured, Roman-nosed, and muscular, should not marry those similarly formed, but those either sanguine or nervous, or a compound of both; for being more strong than susceptible or emotional, they both require that their own emotions should be perpetually prompted by an emotional companion, and that their children also be endowed with the emotional from the other parent. That is, those who are cool should marry those who are impulsive and susceptible.

Small, nervous men must not marry little nervous or sanguine women, lest both they and their children have quite too much of the hot-headed and impulsive, and die suddenly. Generally, ladies who are small are therefore more eagerly sought than large. Of course this general fact has its exceptions. Some are small hereditarily, others rendered so by extra action in some form, over-study, over-work, or passional excitement; because during growth, their intense nervous systems consumed energy faster than their weak vital could manufacture it; which dwarfed their stature.

A woman who is small-boned and extra fine-grained, must marry one extra prominent-featured and large; while two who are prominent-featured, long-faced, and formed upon the same general model of potentiality should not affiliate. A woman evenly balanced is adapted to any large, tall, prominent-nosed man, but not to one small and sharp-nosed, or thin-lipped.

Webster preferred little women; he coarse, they fine; he powerful, they susceptible; his love animal, theirs more sentimental; he forcible, they pliant. Short, rotund, small-boned women attract and are attracted to tall and spare men; while those who are slim, absolutely must wed stocky, wide-jowled, broad-shouldered men.

A Singular Fact.

Two very beautiful persons rarely do or should marry; nor two extra homely. The fact is a little singular that very handsome women, who, of course, can have their pick, rarely marry good-looking men, but generally give preference to those who are homely; because that exquisiteness in which beauty originates naturally blends with that power which accompanies huge noses and disproportionate features.

Psyche loved Apollo desperately, says Mythology, on account of his beauty. Now, this must have been purely imaginary. No woman thus beautiful ever loved a handsome man, if she could find any other. The Greek Slave, who was chiselled by the sculptor as medium in form, would choose not a tall, slim, but a thick-set, broad-shouldered man, though perhaps tall if capacious-

chested and prominently-featured. Psyche would naturally choose a man of talents rather than of a good physique; and a right homely and even awkward man need not fear a refusal, if he is only powerful, original, logical and smart.

All bony, muscular temperaments, and strongly-marked outlines, should marry a smooth, round, plump form.

Rapid movers, speakers, laughers, should marry those who are calm and deliberate, and impulsives, those who are stoical; while those who are medium, may marry those who are either or neither, as they prefer.

Masculine Women.

Masculine women, who inherit their *father's* looks, stature, appearance and physique mainly, should give preference to men who take most after the mother, physically; whilst women cast strongly after their mother should marry those men in whom the masculine form and physiology superabound.

Noses indicate characters by indicating the organisms and temperaments. Accordingly, those noses especially marked either way, should marry those having opposite nasal characteristics. Roman noses are adapted to those which turn up, and pug noses to those turning down; while straight noses may marry either.

Narrow nostrils indicate small lungs. Such are adapted to those with broad nostrils, which accompany large lungs and vital organs.

President John Adams lived in the most poetic affection with his wife over half a century. He had all the signs of a vigorous sexuality, along with that harmonious evenness which would neither give nor take offence. He was so splendidly sexed that any and all women would love him; besides being talented, moral and most appreciative of the sex. He was best adapted to a woman rather tall, certainly not oval, but especially refined. A little irritability was his only fault.

Heavy lower jaws, which signify animal vigor, are adapted to light; but two with heavy jowls would create too animal offspring; and two thin ones, those too feeble physically to become, accomplish or enjoy much. Thus Miss Slim may marry a robust, well-rounded figure, but not Lincoln, who was well adapted to his wife; he lantern-jawed, she rotund.

Large mouths and lips signify hearty sexualities. Small mouths in females are poorly adapted to large-featured, bony, broad-built, robust men.

No two with narrow, retreating chins should marry; but such should pair off with those which are broad, prominent and projecting downward.

Unfortunate Marriages.

Miss Exquisite must on no account marry "a young man of the period," slim, slight built, sprightly, all nerve, the lower part of his face thin, neck small, brilliant, and forehead high and prominent; for their nervousness would engender mutual antagonisms in a week; and their children would not survive a scarlet fever attack a day. Only a large-featured, cool, strong man is at all adapted to her.

No fat, short husband would do for Miss Plump. Oval and short herself, only a long-faced, tall, spare man would draw her love.

A woman who is "all soul" must marry a man who is somewhat of an animal, strong, practical, energetic, for if she chooses an exquisite, ornate, nice, finished, bright, sentimental man, their children, if they produced any, would be too angelic for this coarse

world, and leave it early. Nor could she endure such a husband.

A long-faced, thin-visaged, long-nosed, long-necked person, built on the crane principle, should not marry one of similar physique, but one who might be called Miss Square, or Miss Gay, or Miss Plump, for their form indicates impulsiveness; his, coolness; theirs, flash; his, power.

The Tall and the Short.

A tall pair is rare; but a tall, elegant woman is often found mated with a short, stocky man, and *vice versa*.

Two having fine soft hair and skin are not as well adapted in marriage as those having one the coarser, the other the finer; lest their offspring should be too exquisitely organized for their strength; nor should two very coarse-haired, lest their children prove too coarse and animal; yet those whose hair and skin are average, may marry fine, or coarse, or medium.

Curls should not marry curls!—except those easily taken off—but should select those whose hair lies so close and smooth as to fairly shine; while wavy hair is adapted to either or neither.

These cases are instanced, less on their own account, than as illustrations of the *law* involved; which, once understood, becomes a guide in all other cases. Still, none should be rejected because of some *minor* conditions, provided the great *outline* characteristics are all right.

A right mental adaptation is, however, as much more important than a right physical, as the transmission of the mind is than that of the body. Gender, too, inheres mainly in the mind. Then what laws govern mental affiliations?

Those which govern physical. In their great outline they must be substantially alike. Thus, a savage and a civilized do not harmonize as well as two savages, or two who are civilized. No instances of genuine affection obtain among all the marriages of white men with squaws, or African, or Malay women, except where the latter have been first civilized. Could a bigoted heathen love a bigoted Christian? The more either sets by their religion, the less they would set by each other. Not only must a Chinese marry a Chinese, a Turk a Turk, and a Christian a Christian, but those of the same Christian faith must marry those of like tenets. Catholics naturally blend with Catholics, and Protestants with Protestants, never with those of opposite faith.

Different Religious Beliefs.

Conflicting beliefs can love each other when their sexual attraction is sufficient to overcome religious differences; yet religious harmony increases, and differences diminish, their natural assimilation. So great is this sexual attraction, that a savage man and civilized woman can live happily together; yet how much more cordially could savage live with savage, and one of his own tribe, and civilized with civilized, and one of their own or like mode of civilization. Even those of different nationalities will find their national differences a source of many more discords than concords, and should marry only when love is sufficiently strong to overrule this national antagonism.

Political views are governed by this principle, yet if two persons will subject politics to love, they can live affectionately. "You have a right to your opinion, and I have to mine; I will not trouble you about your political views, and you shall not pick a quarrel with me." This is a good rule, and, if followed, would save many a tempest in the household. The opposite rule is: "You



GALLANTRY OF THE EIGHTEENTH CENTURY.

have a right to believe as I do, and I insist that you shall." This is the jug-handle, all on one side.

Lack of affection in both will render their marriage and offspring tame, even though both are talented and moral. At least one should be affectionate, better if both are; yet her lot is hard, who, with warm, gushing affection, is repulsed when she expresses it. She who dearly loves to be caressed and fondled, should be; and if she marries a cold, distant man, whose love is merely personal, she must expect to pine and starve, and dispense, during maternity, with that sympathy and tenderness she then so much needs and craves.

The True Gentleman.

A true lover is always attentive, kind, considerate, and prides himself on being courtly and gallant. A real gentleman can be picked out from a thousand by his polite treatment of ladies, such as is pictured to the eye in the accompanying engraving, which represents the courtly gallantry of the 18th century. Ladies, such a gentleman for a husband is worth more than the dollars of a hundredfold millionaire, yet he may have the millions and be a gentleman into the bargain.

Few are perfect, mentally and sentimentally; therefore most require to offset their excesses and defects by marrying those *unlike* themselves. They must be sufficiently alike in the majority of their great outline characteristics to fuse their differences; but since almost all have too much or too little caution, kindness, selfishness, taste, justice, most persons need to marry those unlike themselves, in one or more respects.

Evenly balanced heads may marry either those well or poorly balanced, yet prefer those well balanced. Those who marry even, may expect their children to be good, yet not remarkable; those who marry contrasts, may look for those of bolder outlines, who will be noted for something special. Yet if these differences are considerable, they produce miserably balanced children, usually unfortunate and unhappy.

Strongly feminized men, who inherit after the mother or grandmother, should marry strongly masculinized women, who take chiefly after their fathers, so as to secure both male and female characteristics. Dependent and vine-like women are always drawn most to positive, firm, wilful, authoritative men, who love to command, and take the responsibility; while strongly feminized men need "strong-minded," forcible women—those related to the Amazons—to assume the responsibility and spur on to effort; yet some of this class require to marry men who are still firmer than themselves, and forcible enough to create deference.

Weak Characters Despised.

A woman, to love a man well, must look up to him with awe and respect; yet all women despise weak, vacillating men. No woman who has much feminine intuition can possibly love a putty man.

Men who love to command must be especially careful not to marry imperious, women's-rights women; while those who willingly "obey orders," need just such. Some men require a wife who shall take their part; yet all who do not *need* strong-willed women, should be careful how they marry them. Unless you love to be opposed, be careful not to marry one who often argues and talks back; for discussion before marriage becomes obstinacy after.

A sensible woman should not marry an obstinate but injudicious, unintelligent man; because she cannot long endure to see and help him blindly follow his poor, but spurn

her good plans. Though such men need just such women to help lay out their life-course, while such women could get on passably with such husbands who heeded their suggestions; yet such men plan poorly, blindly follow their own wills, and authoritatively compel their wives to help carry them out.

How Good Wives are Spoiled.

Obstinate men must be sensible, or else content with wives and children who are not. If they could only realize that such women are just the very ones they require, yet that they should always ask and *heed* their advice, they would render their wives' position most agreeable instead of painful, and every way most promotive of their mutual happiness and success. How important a change would be effected by this apparently trifling condition! Yet in most like cases such men spoil such women. They are drawn together at first because naturally adapted to each other; yet their adaptation is spoiled by denying her her natural place in their copartnership.

A submissive but intellectual woman may marry a man whose will is stronger, even though his intellect is smaller, than hers; yet it is better for both if his intellect is still larger than hers, so that she may repose in his superior judgment. Such a woman feels inadequate to assume responsibilities or set herself at work, and must have some guide. Naturally dependent, she must lean, though even on a crooked stick. Fortunately, however, she can adapt herself to almost any man.

Hence, if her second husband should be totally different from her first, and third from either, she could yet conform to each with equal ease; and if force is large, will work most effectually and willingly with and for him, however opposite their specialties; besides quietly adapting herself to extreme vicissitudes, by making the best of what is. Such, especially if love is large, make the *very* best wives, because efficient and sensible, yet affectionate and comformable. And there are many such.

The reserved or secretive should marry the frank. A cunning man cannot endure the least artifice in a wife. Those who are non-committal must marry those who are demonstrative; else however much they may love, neither will feel sure as to the other's



CROSS AND OBSTINATE.

affections, and each will distrust the other, while their children will be deceitful. Those who are frank and confiding also need to be constantly forewarned by those who are suspicious.

A timid woman should never marry a hesitating man, lest, like frightened children, each keep perpetually re-alarming the other by imaginary fears; nor yet a careless man, for he would commit just indiscretions enough to keep her in perpetual "fear and trembling;" but should marry one who is bold, yet judicious, so that her intellect, by

reposing in his tried judgment, can feel safe, and let her trust in him quiet her natural fearfulness.

A hopeless man should marry a resolute, hopeful woman, who is always telling how well things are *going* to turn out, and encouraging, and who has sufficient judgment to be allowed the reins, lest the fears of both render him pusillanimous, and their children cowards. Many men live tame lives, though abundantly capable of accomplishing almost anything, because too irresolute to once *begin;* whereas, with a judicious yet expectant wife to prompt them to take initiatory steps, they would fill responsible positions.

The Curse of Extravagance.

An industrious, thrifty, hard-working man should marry a woman tolerably saving and industrious. As the "almighty dollar" is now the great motor-wheel of humanity, and that to which most hushands devote their entire lives, to delve alone is uphill work. Much more if she indulges in extravagance. It is doubly important, therefore, that both work together pecuniarily. But if either has property enough to create in both a feeling of contentment, large acquisition in the other is less important; yet a difference here often engenders opposition elsewhere.

Good livers should marry—he to provide table luxuries, she to serve them up, and both to enjoy them together. Indeed, a good appetite in both can often be made to harmonize other discordant points, and promote concord.

Men large in beauty should by no means marry women deficient in it; yet women in whom it is large may marry men in whom it is only fair, provided other traits are favorable; for a man of taste can never endure a slattern, while a woman of taste can bear with a man who is careless of appearances, and love him, provided he has sufficient power and stamina of character to eclipse this defect by his sterling characteristics; yet he must let her "fix him up nicely."

A clergyman of commanding talents, superior eloquence, and the highest moral worth, was publicly described as likely to marry a woman of superior taste, refinement, personal neatness, beauty, elegance of manners, poetry, and many other like expressions denoting large beauty; whereas she was the reverse; but he lived unhappily, and spent much of his time *from home*, because he could not endure her coarseness and slatternly habits, and *never took her out.* He had married her money, and was anything but conjugally mated or happy; so that the prediction was right in principle. The rule was proved by the evils consequent on its violation.

Animal Propensities.

Animal love, excessive in both, prompts to that over-indulgence which breaks down the nervous systems of both, and renders their children too impulsive, fiery, and animal; whereas, when one is passionate and the other passive, the former will inspire passion in the latter, yet be toned down by the passive one; while their children will unite the Platonic love of the latter with the impassioned of the former, and be better than either; whereas, its deficiency in both renders progeny too tamely constituted ever to enjoy or accomplish much. And yet such absolutely must adapt themselves to each other.

The irritable, yet approbative, must by no means marry those like themselves, lest the irritability of each, by blaming the other, rouse mutual resentment. Yet if such are married, both must be especially careful how they cast any reflections; because the

other party construes them to mean much more than was intended. Probably more conjugal animosities originate in this wounded ambition than in any other faculty. Nothing as effectually rouses and intensifies every existing antagonism. Pride is a good thing, but must be respected and humored, at least not upbraided or mortified. Even if a man can gratify a woman's love of style and display, he must not censure her in private, unless he is willing to kindle her hate, and spoil their children.

Fault-finding beaux and girls, during courtship, are sure to scold intolerably after marriage. If your moderate ambition can endure censure, marry; but if not, take timely warning from "straws." One who is hard to please before marriage, will be much harder after; while one who patiently endures and forbears during courtship, will be more so after marriage, if kept in a love mood; and a beau who insists on having his way before, will be dogmatical if not domineering after; and must marry a meek, patient, accommodating woman.

This counterbalancing law also governs the intellectual faculties. If a man who has large perceptives with small reflectives, marries a woman having large reflectives with small perceptives, since both transmit what is strongest in themselves, their children will inherit his large perceptives *along with* her large reflectives; thus possessing the perfections of both, unmarred by the imperfections of either. He can remember, but not think; while she can think, but not remember; yet their children can both think and remember.

How Love-Making Should be Conducted

WE have now stated the plain rules which should be observed in making selections for marriage. Both the physical and mental traits ought to be carefully considered; health and physique should be taken into account; also the disposition and mental peculiarities. We come now to those plain and sensible suggestions that should be considered in conducting every courtship. Here it is possible to commit grave errors; thoughtless, careless, impulsive, passionate, giddy young people often spoil the beauty and bloom of love-making.

Excessive coyness and distance sometimes repel. Love must be mutual; hence bashful suitors often fear lest they obtrude themselves on a reserved woman. Many a courted girl represses all advancements, even manifests aversion, though bursting with affection; whereas showing him that she is approachable instead of repellant, would encourage his attentions. Broken-hearted women by thousands have lost their lovers by extra reserve and apparent stoicism, whom a more reciprocal course would have retained. One alone cannot do all the courting. There must be a response, and unless it is prompt and emphatic the fires are liable to die in ashes.

Young man, the lady you are courting is above any other, more sacred, lovelier, sweeter, more angelic, if you please. Open all the treasures of your heart to her; idolize

her, fondle her, feed her craving for affection, treat her with all the delicacy and consideration of which you are capable. Young woman, these same rules are for your side of the house, and you must observe them, in so far as they apply to your sex.

Bungle whatever else you will, but do not *dare* bungle courtship; because its right management will conduct all to that happiest issue of life, a happy marriage; whilst its wrong is commensurately disastrous. Its august mission is to establish between two that eternal affiliation which will ever constitute them "one flesh," cement each other's affections past all possibility of future rupture, and render them *one* in object, doctrine, feeling, spirit, everything.

Beginning Right.

Its beginning is equally regulated by these laws; so that all the power wielded by love over man barely measures the blessings conferred by its right initiation, and the miseries inflicted by its wrong. Indeed, its first stage is by far its most eventful, for good and evil. When begun and conducted just right, it waxes better and better; but worse and worse when started wrongly.

Young folks, this subject concerns you as much as does a happy marriage. Parents, you have a stake in this matter equal to all your interests in your dear children's marital well-being.

Some fundamental errors alone could blight the great majority of marriages as now. No minor superficial causes could effect results thus terribly fatal. Only a very wrong beginning, very wrongly continued, could even prevent all marriages from being superlatively happy, much less mar most of them, and render even the majority of them wretched. So great is the power of love to unite two of even opposite temperaments, fuse those naturally uncongenial, amalgamate those actually repellant, and harmonize even civilized with savage, that only some monster wrong in its very beginning could eventuate thus disastrously to the great proportion of matches.

Great Number of Divorces.

That a wrong selection is not this cause, is proved by the law that love is both self-perpetuating and self-augmenting; that all who once begin, naturally love more and better the longer they live in love. The number of divorces applied for by Anglo-Saxons, despite their great unpopularity, even disgrace, children, and all other ties and obstacles, proves that our marriages are far more unhappy than those of the bulk of mankind; whereas they should be as much the happiest as we are the most enlightened.

Love miseries outside of marriage at least equal, probably surpass, those within it. Ye celibates attest how inexpressibly you have suffered in your affections. What miserable days! How many agonizing nights! because made thus wretched through love disappointed, and this through errors in love-making; but for which you would have kept your sweetheart, and been as happy as you have now been miserable.

Commensurate causes have effected all these losses of enjoyment, and inflicted all these penalties. Then, what are our marital canker-worms? What wolves and tigers perpetrate all this dreadful havoc? What love-making ordinances, violated, inflict all these untold yet ever variegated pangs on wretched millions, in wedlock and out? What misery is to be compared with that jealousy which is often justly excited by thoughtless conduct? Why must queenly women be tortured and sent, pining, to an

early grave? What is the secret of all these untold evils and sorrows? What ruthless hand is it that works all this evil?

All civilization is concerned in the answer, as much more than in "the laws of trade," as a fortunate marriage makes happier than fortunate speculations. First and foremost,

Flirting, Courting "Just for Fun."

They are universal, almost. Who can say, "I never made love, and had none made to me, except to and by the one I married?" What means all this street gadding after dark, so common in factory and other towns, but to see, be seen by, and flirt with the "fellars" and "gals." "Big school boys and girls," answer: "Don't you cast sheep's eyes back and forth, and spend more time in enamoring each other than in study? in loving than mental culture? and give more soul to cultivating the mere sensuous aspect of amativeness than to mental discipline? Even Sabbath-school and Bible-class scholars, don't you coquette back and forth with much more thrilling interest than you study 'the Word of God' and your own soul's salvation? Teachers, confess whether you do not reciprocate much more love with scholars and each other than you would acknowledge, perhaps yourselves realize? Or if not, our eyes badly deceive us.

"Church attendants, go ye not 'to meeting' sometimes more to oggle than pray, flirt than adore, worship Venus than Christ, go home with a girl, or go home with 'a fellar,' than to 'love the Lord?' Ladies, what induces you to dress thus voluptuously, behave so fascinatingly, and comport yourselves thus stylishly? 'To win the beaux, admire and be admired by them," is your *practical* answer in most that you say and do there. You do not 'primp up' and 'pretty off' thus for naught. Only some great motive could inspire and prompt all this; and that this is love, is attested in all your ways and actions. Come, 'own up,' at least to yourselves."

We know that multitudes act from higher motives; this does not affect the statement respecting others.

Parties, balls, suppers, receptions, are obviously and avowedly "got up," loved, and conducted to make conquests, "cut out" each other, enamor and be enamored. The writer saw a Kentucky maiden rendered just as furious, mad is too tame a word, as she could live, because another girl at a superb party had drawn off her escort. "Society girls" proclaim in all their winning actions, their entire spirit and make-up, that captivating and being captivated engross their whole souls, and inspire them throughout.

Coquettish Maiden.

All coquettes equally illustrate our subject of "making love merely for the fun of the thing;" as well as all encouragements without a marriage purpose. "I never am, intend never to be, if I can help it, without some fellow to keep company with," said a maiden of thirty.

Coxcombs, what are *you* after in all your compliments and gallantries? Girls' *hearts* is the answer returned in all you say and do. A dozen maids and widows consulted a phrenologist as to their marriage adaptation with the same man, a most desirable "catch," who was courting and fooling them all, and doubtless other dozens besides, with marital encouragements.

Many kindred illustrations of this almost universal flirtation in civilized communities exist. It seems to be so inwrought into the very frame-work of civic customs as to need no more, hardly this much, amplification.



JEALOUSY.

Inflicting pain is diabolical, except in doing good. All mankind have justly cursed Nero's cruelty. All wanton tortures of man by man are heinous.

Trifling with Another's Affections.

Yet men who torture women cap the climax of human depravity. Worst of all, how fiendish for *young* men to elicit only to blight the affections of young women! Attest, all ye who have suffered thus, what other life-misery was equally protracted or agonizing? Women suffer more than men; and girls most of all. How fearful the effects of affectional blight! Only those who have suffered thus can begin to realize how awful. And even they barely begin.

Yet you, flirting culprit, inflict all this on a fellow-being, a child of our common Father. Men should promote the happiness, not cause the misery even of beast, much more of man, most of all of females. Let savage Indians torture captives to death by slow, agonizing inches, but shall civilized men inflict years of mental wretchedness on a woman till she becomes a mere wreck, in mind and body? Torturing the opposite sex is double-distilled barbarity.

By often escorting her to church, concert, picnic, party; by looking so blandly and seeming so happy with her, as if you could not bask enough in her affections; by your actions, which always "speak louder than words;" and many like means, you solicited hers in return; until, reluctantly, confidingly, she took you at your *act*. By thus inviting her affections, you proffered her your own far more than any words could proffer: else actions are only farces.

Your gallant attentions on their very face assured her, that if she would reciprocate your love, you would continue to love her alone for life. How outrageous to solicit and accept hers without returning your own. He is far less a robber who asks a merchant his price for specified choice articles, seems satisfied, and *takes the goods*, but sneaks out with "I never *promised* to pay."

"Your taking the goods implied and expressed your promise of payment, and holds you thereto," is the only business answer; and is that woman's whose love you solicit and accept. Paying equal court to all by gentlemanly deportment only, does not commit; whereas singling out *one*, proffering her your escort, and expressing and reciprocating love, constitutes the highest proffer of marriage man can make to woman.

How Love is Blighted.

What business have you with any woman's love except as your *wife*, actual or prospective? It is her wifehood. And *all* of it. Its entire rationale is to render her a wife, and thereby mother. And the stronger it is the better a wife and mother it renders her. Your blighting it *de facto* mars or spoils her wifehood. Or if not, no thanks to you; for you did what is precisely adapted to spoil it. Loving you unfits her for loving and marrying another. You either spoil both her and thereby her future husband if she marries, or by sickening her of marriage, render her an old maid, and thus rob some man of all the happiness she would have enjoyed and conferred with husband and children.

You injure her relatives. After her doting parents have done their best to fit her to become a superb wife and mother, you visit her as a suitor. They tolerate your visits only as such. If they supposed you came merely to fritter away your and her affections, they should and would bar their doors against you. They being her natural protectors makes it their bounden duty to see that all her lovers come, not as wolves in sheep's

clothing, but only as genuine marriage candidates, or otherwise eject you indignantly, even violently, just as if you assaulted her virtue.

In this false disguise you win only to break her heart, and then turn traitor. Confidence between friends, should never be betrayed; much less between the sexes; last of all between lovers. What is breaking



A RIVAL DISCOVERED.

faith as to dollars, word of honor, veracity, everything else, compared with betraying a woman in that holiest relation, her affectional?

Female flirtation is almost as bad. After coquettishly inviting and allowing a man to love and caress you, how wicked to agonize him by his causeless dismissal? Be not so cruel. Inflict not a wrong thus great on a *young* man who has paid you that greatest practical compliment of loving you, after you have expressed for him that tender fondness and exalted regard inherent in loving. Perpetrate almost any other sin, inflict any other torture, but spare him this agony, yourself this crime.

Every girl should steel her heart against all affectional overtures, unless and until accompanied by *proposals*. Her love is her all; so that she should "set her face as a flint" against all forms of courtship, unless first certain that her affections can and will be reciprocated, and eventuate in marriage.

Allowing Attentions.

Woman should guard man's love likewise. Shall she allow him to wait on, and proffer marks of special regard, when she has no intention of marrying him? She may not do him as great a wrong by allowing his attentions as he her by proffering his "just for fun;" but does she not do him a wrong no true woman should ever inflict on any man? The mere fact of receiving his special attentions practically encourages their continuance, and promises her own in return. Neither sex should allow any affectional manifestations till affianced. They may allow attentions and civilities, but not love-tokens.

None can choose wisely after beginning to love; for Cupid is, always has been, must be blind to the faults, while magnifying the virtues of the one beloved.

Women never bestow affection till solicited, in word or deed, at least till after twenty-two; nor then without *leave*, and a virtual promise of its return; for nature has thrown a wall of maidenly modesty around female love, which restrains undue forwardness. Let the self-consciousness of all testify. But when it is once drawn out, she clings as with the



THE PROPOSAL.

grasp of desperation to the man who elicits it. To shake off either is wellnigh impossible.

How do these youthful flirtations and conquests, so trifling in themselves, cause all these varied and aggravated evils of vitiated love and marital miseries? Because

Loving Involves Marrying.

Love and marriage are necessary concomitants. Each consists in the other, and was created specifically for the other, as much as valleys and rivers, or the two halves of a bivalve; and cannot possibly be separated. Therefore those who reciprocate love together, thereby proportionally marry each other. Whether their marriage is or is not mentioned, matters nothing. Loving actions and expressions are *marriage* actions and expressions.

He who makes love to any woman thereby makes marriage to her; and she, by allowing it, consents to marriage, and by reciprocating it marries herself to him. Nature has so linked love and marriage together that man can never separate them. And he who, after having made love to a woman, discards her, has divorced himself; as she divorces herself who rejects a lover she has allowed to make love to her. How monstrous is this sin, yet, alas, how common! Those who perpetrate it "sow to the wind," and must "reap the whirlwind."

As "great oaks from little acorns grow" in the world of seeds; so doubly in that of the human passions and emotions. As a small crevasse in the levee of the great "Father of Waters" very soon widens and deepens, till it finally overflows "all the country round about," doing millions of damage, from a beginning so small that a single spade of earth, rightly applied, would have prevented all; so anything during courtship which causes pain, endangers an irreparable breach between two who otherwise would have remained perfectly happy together.

And the earlier, the more assiduously it should be guarded against, or arrested in its very beginning. Till the affections have become so confirmed that to sunder them is wellnigh impossible, but not till then, let both stand sentinel, neither giving nor taking offence, nor causing pain in this or any other way.

"The Poison of Asps."

Love-spats are hate-spats. Though experienced by most lovers, yet none realize how fatal they are to subsequent affection. As well let a blighting "sirocco" sweep over a fertile plain teeming with life, as any of these poisonous love-blights cross your flowery pathway. Their effects on future affection are almost paralytic, and should on no account be allowed. What is settled hatred in marriage but prolonged "spats?" They are the more fatal the oftener they recur; are a hornet's sting thrust into the eye of affection. "The poison of asps is under their lips."

The first spat is like a deep gash cut into a beautiful face, rendering it ghastly, and leaving a frightful scar, which neither time nor cosmetics can ever efface; inducing that pain so fatal to love, and blotting that sacred love-page with memory's most hideous and imperishable visages. Cannot many now unhappy remember them as the beginning of that alienation which embittered your subsequent affectional cup, and spoiled your lives? With what inherent repulsion do you look back upon them? Their memory is horrid, and effect on love most destructive.

Their analysis reveals their inherent deformity. They consist wholly in mutual animosities and reproaches; and imply or ex-

press that each has done or is doing the other a wrong so deep and wilful that justice, self-respect, and all the faculties require the positive resentment of even lovers. For acquaintances to "fall out," is bad; but for those who have lavished their mutual affections upon each other, is perfectly abhorrent to all the higher, finer feelings of human nature. Those who thus resent supposed grievances thereby charge the accused with conduct too outrageous to be borne, and condemn in language and manner; while those who sulk, imply that their "grief is too deep for utterance," and anger too strong for speech.

Love Killed by Quarrels.

What condemnation could be more condemnatory? What is this but the utmost disdain? How contrary to the spirit of true love! It is to love what a black frost is to vegetation, always, necessarily, and *ipso facto*. Blaming acquaintances is wrong, unless their guilt is palpable; those of opposite sexes worse; lovers by far the worst. "If mine *enemy* had done this, I could have borne it, but it is my *friend*, with whom I have taken sweet counsel." What are all lovers' "spats" but disappointment in its very worst form? They necessarily and always produce all its terrible consequences.

"Thunder-storms clear the atmosphere," say some, "and promote vegetation; then why not love-spats promote love?"

Their very nature blights it. They always might promote it, because nature extorts good from evil; yet "shall we therefore do evil that good may come?" Is that "wrath" less evil which is made to "praise God?" But as sickness, rightly managed, clears the system of disease, and promotes subsequent health; so these "hate-spats" can be made to strengthen love, *provided* the wronging party confesses, begs pardon, and promises never to sin thus again; and both mutually do forgive, revow, and re-resolve to do better ever afterwards; thus virtually remating. But *re-cherishing* love is what both staves off this dire alienating consequence, and substitutes re-increased affection. When "spats" work out their own legitimate effects, they always reverse and destroy affection; and mere snarls redouble them in proportion to their frequency and intensity.

"Would Have Given the World.

How do they make you feel afterwards? As though a terrible storm had chilled and drenched you, and a lightning flash came near destroying roots and top; as though snatched from the very edge of a precipice, and saved from a yawning gulf; ashamed, humbled, and "extremely *sorry* this difficulty ever happened;" "would have given the world if it had not;" as if renewed efforts are required to repair its breach; and "this never ought to recur." It is a most dangerous experiment; and every new one only re-increases their fatality. Even the strongest love will endure but few, nor any survive many. Their final impression is, "I will overlook this one, but don't provoke me again." They leave it on a plane far below that on which they find it; not on a familiar, but on a suspecting or hating one; substitute distrust for confidence; and induce a feeling of commonness or else contempt, in place of exalted admiration; and totally change all your looks and actions.

Both now eye each other like two curs, each watching lest the other should gain some new vantage-ground of assault. Before so tender, now so cold and hardened! Before so coy and familiar, after, how reserved, distant, hard and austere! How talkative before, demure after, as if attending

to something else, and trying to forget that each other is present! Your mutual platforms and standpoints respecting each other how strangely altered, but only for the worse!

If you make up by confession, the confessor feels mean and disgraced; or if both confess and forgive, both feel humbled; since forgiveness implies inferiority and pity; from which whatever is manly and womanly shrinks. Still, even this is better than continued "spats."

Patient Endurance.

"They are almost universal, and in the nature of our differences cannot be helped. The more two love, the more they are aggrieved by each other's faults; of which these spats are but the correction." Thus people agree.

False, every sentence. Instead of being universal, they are consequent on imperfect love, and only aggravate, never correct errors. Sexual storms never improve, whereas, love obviates faults by praising the opposite virtues. Every view of them, practical and philosophical, condemns them as being to love what poison is to health, both before and after marriage: they are nothing but marriage discords. Every law of mind and love condemns them. Shun them as you would deadly vipers.

Prevent them by forestallment. Begin by vowing to each other that neither will give nor take offence; because each *knows* the other *intends* no wrong. Those who start their love-career on this platform will make the most of all palliating circumstances, and patiently endure the balance.

Instead, many lovers assign the blackest motives to ordinary actions, and take offence where disinterested beholders see no wrong; because imperfect love is exacting and censorious, while genuine is forbearing, forgiving, and indulgent. Love partly reversed by fear, or any other faculty, produces that suspicious state which is to genuine what jealousy is to conjugality, and tears the core out of its pitiable victims.

Establishing a perfect love in the beginning constitutes a preventive. Fear that they are not duly loved, and mortified pride, usually pave the way for these "spats," by reversing love. Then let all who make any pretension guard against all beginnings of this reversal, and strangle these "hate-spats" the moment they arise. "Let not the sun go down upon thy wrath," not even an hour, but let the next sentence after they begin quench them forever. And let those who cannot court without "spats," stop; for those who spat before marriage, must quarrel after.

No Concealments.

Truth will out, surely after marriage. Both should, will, must know each other. To decide wisely whether they can love and will marry, each must ascertain the other's tastes, likes, dislikes and specialties, faults included. Love can fasten only on excellences, known or supposed; and is proportionate thereto.

Frankness thus becomes indispensable, and the only *paying* policy. All concealments before marriage are fatal ever after; for it reveals faults sometimes. If known before, each naturally expects to tolerate them, yet love for all; which half obviates them, by almost compelling allowances; whereas the one deceived feels "sold."

Making your beau think by millinery appearances that you have a splendid form, when marriage reveals only padded shams, throws a "wet blanket" over his love, the more fatal the more he is thus enamored. So equally of false teeth, making believe younger by dyeing hair or whiskers, etc.



THE LOVERS' RECONCILIATION.

The age should never be concealed. Even reluctance to tell it virtually says, "I'm ashamed to tell how old I really am." Yet nature's infallible age-marks unmask all.

A splendid young man, whose love was quite personal, on marrying a supposed beauty, found she had a slight blemish; which so disgusted him with her that he abandoned her, though enamored of her otherwise; which agonized both beyond description, yet would have been prevented by its mere mention.

Lies Never Pay.

All deceptions react against their authors, and lay and fire trains for nuptial explosions fatal to the marital enjoyments of both, by putting the wronged, and thereby both, into a hating, hateful mood. Lies never *pay*, but always punish, all liars. Throughout all God's domains "*honesty is policy*." Truth triumphs. Nature punishes all who "bear false witness" in any form. "Thou shalt not *lie*" is doubly imperative in marriage.

Both should make clean breasts of all their traits, good, bad and indifferent, before loving or engaging, and in order thereto.

"But this would prevent or break off most marriages."

Whenever it would, it should. When knowing faults before would turn love, learning them after will kill it; and that after marriage prevents placing it elsewhere. Yet candor only promotes them; because both are in a loving, overlooking *mood*, which is everything. The parents, at least, of the girl should tell him her virtues and failings. All should know all about each other in some way; and those to whom reference is made, should conscientiously tell the whole truth.

Court in every-day clothes. Having stated times when both see each other arrayed only in their best habiliments of character and attire, is not adapted to reveal their genuine traits. After engagement both should "put their best foot foremost," which is natural to love; but before it, they should see each other in their every-day apparel, about their daily avocations, and as they are likely to appear after marriage; each occasionally "popping in" upon the other informally, familiarly, and as an every-day acquaintance, that each may see the other's habitual *natural* appearance and actions.

Men often court to get money. Any woman who has saved up a few dollars by whatever of labor and self-denial is in danger of being courted out of it, on the obvious principle that the shortest way to her pocket is through her heart. Women, turn all men right out the moment they suggest your letting them have one dollar, no matter how plausible their pretence. Only the worst, meanest of villains will ever play *that* card. In comparison, robbery is a virtue.

A Broken Match.

Parents, beware how you encourage a false courtship. An indulgent mother, wealthy, fashionable, and occupying a high social position, took summer board for herself, beautiful daughter of eighteen, and daughter's lover of twenty, choosing contiguous dormitories for them, and allowing them the most perfect intimacy; to which, since they were "engaged," none objected. She even encouraged their familiarity by urging that "courtship" is the only genuine love-season of life; that marriage is fatal to love; that, therefore, lovers should make the most possible out of this sunny gala-day of life; and that, as she would indulge her daughter in dress, jewelry, everything else to please her, so she would treat her to one

good, long, bright, balmy, luxurious courtship, which she prolonged by postponing their marriage.

But a more "advantageous" offer made her break off this match; which spoiled that superior young man whom she had encouraged to caress her daughter till his whole being was bound up in love for her, inflicting on him God only knows how much misery, and vitiating his love by interrupting it, a wrong she had no right to inflict; besides most effectually demoralizing her daughter.

What if she did make other conquests, and flirt on, which she did, was she therefore happy? Or does she make a good wife and mother? A sweet, innocent girl then; what is she now? What are her ideas of virtue? Should she not *curse* such a maternal education? Let her example warn other mothers not to tempt their daughters in like manner.

Sudden Loves and Chance Marriages.

"Marry in haste and repent at leisure," is an experimental truism worthy of respect. Gourd love may be pure, but is quite likely to be animal; because inspired by personal qualities. Those denied all association with the opposite sex till this element is almost starved, may possibly conceive a pure mutual affection "at first sight;" yet spiritual love is inspired mainly by mental excellences, to appreciate which requires time. Suddenness is no objection to one prompted by mutual fitness; yet it requires watching till its purity is undoubted. The more sudden it is, the more deliberate should be the marriage. Genuine is content with being reciprocated, without hastening marriage. That is the best which grows *gradually*. "Early ripe, early rotten," applies to it equally with fruits. Yet its purity is the main thing.

Women, you must sometimes decline proffers. This must wound a sensitive suitor's feelings keenly, blight his hopes, and impair his future chances. So sugar-coat this bitter pill by dismissing him as pleasantly and affably as possible, with thanks for that greatest practical compliment inherent in proffers. Your negative itself is almost cruel; so soften it all you can; for his bad feelings injure him proportionally. Only a giddy, vanity-struck girl not worth having, will dismiss in a proud, haughty, disdainful manner, as if he were inferior. His very proffer may have prompted her dismissal that she might boast of having "given him the mitten."

A Happy Escape.

Console yourself, discarded swain, for having escaped a life of married misery with one thus unladylike and unfeeling. Yet it may be fun for her. Ample reasons are certainly due him. Showing *why* your proposed match must needs injure both, will most effectually reconcile him to his fate. By all means part friends. Mutual respect marvellously softens the blow, and may even turn it to the good account of both.

A man must dismiss. He should have less occasion, because he had his pick, while woman is allowed only to say yes, or no! This, with her far greater sensitiveness, requires him to be extra careful to give her the least pain possible; continue friendly; and introduce others as substitutes if you can. Yet reluctance to dismiss should never be allowed to incur a life of marital misery, nor postpone the dismissal; for her love-making heyday is short and precious.

Subsequent changes may make it best to renew their courtship. If so, the *dismissing* party is the one to reopen it. Either may at any time properly inquire whether the other has changed; yet if the woman has dismissed, she is the proper one to recommence.

Causelessly rupturing a love elicited under promises of marriage deserves legal penalties as much more severe than breaches of other contracts as it surpasses them. Dollars poorly express the amount of "damages" due. Yet discovering some marked flaw, some repellent trait, some heart-sickening conduct which has killed love, throws the damages on the one discarded. As a misinforming seller cannot compel a cheated purchaser to fulfil a contract made under false representations, so those causes which reverse love should be allowed full weight, and might even throw the damages on the complainant.

Breaking Engagements.

Fancy-smitten girls and love-struck boys artfully captivated, brought to their senses by "sober second thought," deserve allowances, release, perhaps even pity. Minority releases from other contracts: then why not from marital? No girl who "goes back" on an "engagement" made before nineteen, should be compelled to fulfil it. Whoever takes it should hold it subject to after reversal. Yet a man whose broken engagement has prevented his affianced from having or accepting other offers, doomed her to celibacy and broken her heart besides, should at least make her the poor compensation of dollars enough to support her.

When either finds love reversed by instinctive repugnance, more mature reflection, one liked better, discovering repellent traits, or any like cause, the disliked party should cheerfully release the disliking, if not from magnanimity, at least from self-interest and respect; for all marriages repugnant to *either* must prove fatal to the life-long happiness of both. Mutuality is indispensable in love. Reluctance in either must needs spoil the happiness of both. Those refused can do themselves no greater damage than to compel one dissatisfied to fulfil a loathed engagement. Their true *policy* lies in releasing the other, and looking elsewhere; for the temporary pain of changing affectional objects is far less than the life-long wretchedness of living with a dissatisfied, or repellent, or merely tolerating, or passive companion, or one simply duty bound by an "engagement."

Blind Errors of Courtship.

Either of these errors will prove fatal to any love and marriage, unless counteracted by some powerful antidote. Yet most who court perpetrate nearly or quite all of them, and often others besides. They are inwrought into the very customs and habits of Anglo-Saxon descendants. Of all the customary errors of Young America, none are as fatally destructive or as blindly senseless as those of courtship. But that they are habitual, their perpetrator would be "drummed and hooted out of town," or "tarred and feathered." Unperverted humanity would not let them go "unwhipped of justice," nor will nature. These are some of the breaches of her laws which she punishes with terrible severity, in and by their eventuating in unhappy marriages.

Are these directions true guiding landmarks for all who court, and inherently adapted to promote the conjugal happiness of all who follow them? Are no readers suffering from the evil effects of their ignorant violation? Are they not eminently reliable, because scientific?

We need not extend their list, because *pointing out a more excellent way* obviates all wrongs much more effectually than exposing their enormity; and we have dwelt thus long chiefly to expound the *underlying principles* of this whole subject of love, by showing the miseries entailed by their violation.

Parents who teach their children to court right, need have no fear for their virtue. Forestalling that monster vice, sexual depravity, throughout all its forms, is just as easy as courting right; which is just as easy as breathing. *Knowing* what is due between lovers is its chief means. Young folks intend no wrong, but by following current customs embitter and rupture each other's love; which drives them into sensualities, if it does not crucify their gender. We beg special attention to this declaration, and its vouchers.

Love Begets Love

ANY man who begins to elicit any woman's love, can perfectly infatuate her more and more, solely by courting her right; and all women who once start a man's love —no very difficult achievement— can get out of him, and do with him, anything possible she pleases. The charming and fascinating power of serpents over birds is as nothing compared with that a well-sexed woman can wield over a man, and he over her.

Ladies, recall your love heyday. You had your lover perfectly spellbound. He literally knew not what he did or would do. With what alacrity he sprang to indulge your every wish, at whatever cost, and do exactly as you desired? If you had only courted him just right, he would have continued to grow still more so till now. This is equally true of a man's power over every woman who once begins to love him. What would you give to again wield that same bewitching wand?

Cultivate and manifest whatever qualities you would awaken. You inspire in the one you court the precise feelings and traits you yourself experience. This law affects this result. Every faculty in either awakens itself in the other. This is just as sure as gravity itself. Hence your success must come from *within*, depends upon yourself, not the one courted.

Be extra careful not to prejudice him or her against you by awakening any faculty in reverse. Thus whatever rouses the other's resistance against you, antagonizes all the other faculties, and proportionally turns love for you into hatred. Whatever wounds ambition reverses all the other feelings, to your injury; what delights it, turns them in your favor. All the faculties create, and their action constitutes human nature.

Genuine Admiration.

The almost worshipful admiration by each sex of the other is just as spontaneous as breathing, swelling up in all who are well sexed as their strongest sentiment. In all genuine men's eyes all true women are perfect; as are all men in women's. This is doubly true during youth, and is reaugmented by love, which sees only the good, magnifies it tenfold, and admires in proportion. And the higher and truer one's own sexual nature, the more exalted this estimate.

Say, ye who have passed this poetic period, did you not fairly idolize the opposite sex till your *own* love-nature became demoralized? And each sex *is* even better than the most poetic imagination of the other can estimate it. All comparisons utterly fail to measure the intrinsic worth of each to

the other; because of the happiness each can confer on and receive from the other.

The one who chooses should think the one chosen the most perfect and best for them obtainable, and "thank God for having created one thus perfectly adapted to their precise need."

This worshipful appreciation never can or will give or take offence till annulled; re-enamors and is re-enamored more and more perpetually; inspires just those sayings and doings which enamor the other; and renders all they say and do just right, because their heart's-core promptings are so, like sweet water bubbling up from a sweet fountain.

The Young Rivals Failed.

Esteem inspires esteem. Enamor *yourself* of the one you would enamor. *Admire*, all ye who would be admired.

An elderly man, with points in his favor, having selected a woman eighteen years younger, but most intelligent and feminine, had two young rivals, each having more points in theirs, and came to his final test. She thought much of having plenty of money. They saw they could "cut him out," by showing her that he was poor; she till then thinking his means ample. All four met around her table and proved his poverty. His rivals retired, sure that they had made "*his* cake dough," leaving him with her.

It was his turning-point. He addressed himself right to her *affections*, saying little about money matters, but protesting an amount of devotion for her to which she knew they were strangers; and left his suit right on this one point, adding: "You know I can make money; know how intensely I esteem, admire, idolize and love you. Will not my admitted greater affection, with my earnings, do more for you than they with more money but less love?"

Her clear head saw the point. Her heart melted into his. She said "yes." He triumphed by this affectional card alone over their much greater availability.

Manifesting the domestic affections and virtues, a warm, gushing, friendly nature, fondness for children and home, inspires a man's love most of all, while evincing talents by a man peculiarly enamors woman. In short, the love-inspiring act consists in *manifesting lovable qualities*, particularly the domestic, those which promote love's great end, perfect children.

Consent of Parents.

Securing the benediction of all four parents is certainly most desirable. Assenting to their courting implies acquiescence in their marriage; yet a formal one is desirable, and by letter its best form. If either parent objects, both lovers should try all possible means to win them over; for their blessing and aid are most desirable, and antagonism injurious. You cannot afford to array your proposed family against their established one, if this can be avoided. Indeed, getting the mother in love may be a first step for obtaining her daughter; which her good will greatly promotes, but ill, retards. At least, asking is much more polite than demanding. Establishing friendly relations all around is worth much patient assiduity and perseverance. Both should be loath to defy or provoke the antagonism of either.

Eloping for notoriety is despicable. That girl was silly who was sorry her father gave consent, "because she could not then get into the papers by a romantic elopement."

A gifted law student became thoroughly enamored with an excellent young lady attending the same school, who reciprocated his affection; each more than satisfied with, and both intending to marry each other.

Yet her proud mother objected that "he was not good enough for *her* daughter." Though the girl thought differently, and had done nothing to lessen his love, yet his pride made him ignore her altogether. He met and passed her daily without recognition, till years afterward his love conquered pride, and he reproffered his hand; but she had just engaged herself to another, while her heart still remained true to him.

He Was Enraged.

A man pre-eminently talented and moral, a woman most lovely and devoted, and both perfectly adapted to each other, were spoiled because her mother's prizing her daughter highest maddened him. For shame! He did not take a lawyer's view of *that* question. He should have cherished her love, snapped his finger at others, and let nothing in the heavens above or earth beneath interrupt it.

Relations, you shall not interfere, where even parents may not. Make your own matches, and let others make theirs; especially if you have bungled your own. One *such* bungle is one too many. Learn just how far you may go and stop there. The parties are betrothed. Their marriage is "fore-ordained" by themselves, its only rightful umpires, which all right-minded outsiders will try to promote, not prevent.

How despicable to separate husbands and wives! Yet is not parting those married by a love-*spirit*, equally so? Its mere legal form cannot increase its validity. Marriage is a divine institution, and consists in their own personal betrothal. Hence breaking up a true love-union before its legal consummation, is just as bad as parting loving husband and wife; which is monstrous.

Important business or other requirements might hasten or postpone marriage; yet waiting till all is ready would cause undue delay. Other things should yield to it, not it to them. If anything specially requires its early consummation, hasten it; yet cementing the affections is the great work in hand, which too close intimacy at first rather hinders than helps. As whatever grows has its natural period for maturing, so has love.

As sun changes from midnight darkness into noonday brilliancy, and heats, lights up, and warms *gradually*, and as summer "lingers in the lap of spring," so marriage should dally in the lap of courtship. Nature's adolescence of love should never be crowded into a premature marriage. The more personal, the more impatient it is; yet to establish its Platonic aspect takes more time than is usually given it, so that undue haste puts it upon the carnal plane, which soon cloys, then disgusts.

Why curtail the luxuries of courtship? Should haste to enjoy the lusciousness of summer engulf the delights of spring? The pleasures of courtship are unsurpassed throughout life, and quite too great to be curtailed by hurrying marriage. And enhancing or diminishing them redoubles or curtails those of marriage a hundredfold more. A happy courtship promotes conjugal felicity more than anything else whatever.

The Proposal, Acceptance and Vow.

A formal proffer of marriage naturally follows a man's selection and decision as to whom he will marry. Consent to canvass their mutual adaptations implies consent to marry, if all is found satisfactory; yet a final test and consummation now become necessary, both to bring this whole matter to a focus, and allow both to state, and obviate or waive, those objections which must needs exist on both sides, including any improvements possible in either. The best time to state and waive or remove all objections,

both seeming and real, not already adjusted, is at his proposal and her acceptance. A verbal will do, but a written is much better, by facilitating future reference.

A long future awaits their marriage; hence committing this its initial point to writing, so that both can look back to it, is most desirable. And he can propose, and she accept, much better when alone, and each has all their faculties under full control, than verbally, perhaps when excited. Those same primal reasons for reducing all other contracts to writing obtain doubly in reference to marriage.

An Honest Offer.

You who fear awkwardness on paper, remember that true human nature always appears well, even when poorly dressed. A diamond is no less brilliant because set in clay. Mode is nothing, reality everything. All needed to appear well is to *feel* right, and express naturally what is felt. Saying plainly what you have to say, is all required. An unreserved tender, or dependant conditions plainly stated, is sufficient.

The acceptance or rejection should also be unequivocal, or any contingencies stated, and waved if minor, but if they can neither be obviated nor compromised, should terminate their relations, that both may look elsewhere. If any bones of contention exist, now is the time to inter them finally, and to take the initiatory steps for perfecting both in each other's eyes.

Getting ready to start out together on your life journey, should now engross both.

Your mode of conducting your future affairs, should now be arranged. Though implied in selection, yet it must be specified in detail. Both should arrange your marriage relations; say what each desires to do, and have done; and draw out a definite outline plan of the various positions you desire to maintain towards each other.

Your future home must be discussed: whether you will board, or live in your own house, rented or owned, or built, and after what pattern; or with either or which of your parents, etc. And it is vastly important that wives determine most as to their domiciles; their internal arrangements, rooms, furniture, management; respecting which they are consulted quite too little, yet cannot well be too much.

Family rules, as well as national, state, corporate, financial, must be established. They are most needed, yet least practiced in marriage. Without them, all must be chaotic. Ignoring them is a great but common marital error. The Friends wisely make family method cardinal.

A Perfect Understanding.

Your general treatment of each other now especially requires to be mutually agreed upon. Each should say, "I should like to treat, and be treated by you, thus, but not so; and let you do this, but not that;" and both mutually agree on a thousand like minor points, better definitely arranged at first than left for future contention, each making requisitions, conceding privileges, and stipulating for any fancies, idols, "reserved rights."

Differences must needs arise, which cannot be adjusted too soon. Those constitutionally inherent in each should be adjusted in love's *early* stages; it matters less how, than whether to your mutual satisfaction. Or, if this is impossible, "agree to disagree;" but settle on something.

A concessionary spirit is indispensable, and inheres in love. Neither should insist, but both concede, in all things; each making, not demanding, sacrifices.

What course will make both happiest should overrule all your mutual relations. Write down and file all. Your present decisions, subject to mutual changes and amendments, will become more and more important for future reference, as time rolls on, by enabling each to correct both—for our own changes make us think others have changed. A mutual diary is desirable, for incidents now seemingly trivial may yet become important.

First or Nothing.

See or correspond with each other often. Love will not bear neglect. Nothing kills it equally. In this it is most exacting. It will not, should not, be second in anything. "First or nothing," is its motto. Meet as often as possible. After its fires have once been lit, they must be perpetually resupplied with their natural fuel; else they die down, go out, or go elsewhere, and are harder to rekindle than to light at first.

A splendid young man, son of one of New England's most talented and pious divines, endowed with one of the very best of organisms, having selected his mate, and plighted their mutual vows, being the business manager of a large manufactory, and obliged to defend several consecutive lawsuits for patent-right infringements, neglected for weeks to write to his betrothed, presupposing, of course, that all was right. This offended her ladyship, and allowed evil-minded meddlers to sow seeds of alienation in her mind; persuade her to send his dismissal, and accept and consummate a marriage proposal from another.

As he told his mournful story, he seemed like a sturdy oak riven by lightning and torn by whirlwinds; its foliage scorched, bark stripped, limbs tattered, even its very rootlets scathed; yet standing, a stern, proud, defiant, resolute wreck. A gushing tear he manfully tried but failed to suppress. His lips quivered and voice faltered. Perceiving his impending fate, he seemed to dread his future more than present; and hesitated between self-abandonment, and a merely mechanical, objectless, business life. In attempting his salvation, by proffering advice to the "broken-hearted," he respectfully but firmly declined; deliberately preferring old-bachelorship, with all its dearths, of which he seemed fully conscious. He felt as if he had been deeply wronged, though more hurt than provoked.

It Was His Own Fault.

Yet was not he the *first* practically to repudiate? He suffered terribly, because he had sinned grievously, not by commission, but omission. He felt the deepest, fullest, manliest love, and revelled in anticipations of their future union, but did not *express* it; which was to her as if he had not felt it; whereas, had he saved but one minute per week to write lovingly, "I long to be with you, and love you still," or, "Business does not, cannot diminish my fondness," he would have saved her broken vows, and his broken heart.

Love-letters, or writing love naturally puts and keeps it in its Platonic mood, more than talking it; besides enabling you to discuss subjects like those just named in the best manner.

Mingling other enjoyments with love, by going together to picnics and parties, sleigh-rides and mayings, concerts, and lectures, marvellously cements the affections.

Meet now in your most attractive habiliments of mind and person. French ladies will see their affianced only when arrayed in their best toilet. Yet mental charms vastly surpass millinery. Neither can render yourselves too lovely.

Express affectionate fondness in your visits and letters; the more the better, so that you keep it a sentiment, not debase it by animal passion. It is still establishing its rootlets, like young corn, instead of growing. Allow no amatory excitement, no frenzied, delirious intoxication with it; for its violence, like every other, must react only to exhaust and paralyze itself by its own excesses.

Take a New Departure.

Affianced young man, life has its epochs, which revolutionize it for good or bad. You are now in one. You have heretofore affiliated much with men; formed habits of smoking or chewing tobacco; indulged in late suppers; abused yourself in various ways; perhaps been on sprees. Now is your time to take a new departure from whatever is evil to all that is good and pure. Break up most of your masculine associations, and affiliate chiefly with your affianced. Be out no more nights. Do quit the use of tobacco and spiritous and malt liquors, if you have ever begun their use. They are vulgar and injurious; will disgust your wife and injure your issue; and are unworthy of yourself. Let your new responsibilities and relations brace you up against their temptations; and if these are not sufficient, your prospective spouse will help. No other aid equals that of a loving, loved woman.

Break off from your cronyisms, clubs, societies, except such as duty calls you to attend. Your new ties furnish an excellent excuse. All your spare time and small change are wanted for *her*. To give to them the time and money due to her and setting up in life, is outrageous. Bend everything to your new relations, them to nothing. Now's your time to turn over a new leaf, and turn all the angles, corners and right-about faces needed.

Affianced maiden, you have some departures to take and corners to turn. Your life has till now been frivolous, but has now become serious. You have no more need of toilet fineries, for "your market is made," and you have work on hand far more important, namely, fitting yourself for your new duties. Find out what they demand of you, and set right about making a premium wife and mother.

Both begin life anew. Forgetting the past, *plant and sow now what you would gather and become always.*

The Right and Wrong Way.

Man is naturally tyrannical, and having no other victims, often lords it over his wife and children; while she, excedingly rigid, insists that he shall conform to *her* standard; and cuts off his legs when too long, or stretches them if too short, being perfectly conscientious; yet wrong because so scrupulous. Saul was both. All who hang witches are not dead yet. Each should let the other stand or fall to his or her "*own* master." Personality is as inalienable a birthright as life; and no more to be abridged. Each should live and *let* live.

To interfere is tyranny; to be interfered with, slavery. All each may say is, "I should love you the better if you were or did thus." Each should conform to the other's standard as far as possible and require no more. Both a henpecked husband and a crushed wife are worthless. What government is as tyrannical as domestic tyranny? Many wives are completely crushed by a domineering husband, and husband by wife. Both victimized, yet victimizing.

Beginning and conducting courtship as these pages direct, avoiding the errors and following the directions they specify, will just as surely render all superlatively happy as

sun will rise to-morrow. Scan their sense. Are they not scientific? Do they not expound nature's love-initiating and consummating ordinances? Are they not worthy of being put into practice?

Discordants, can you not trace many of your antagonisms and miseries to their ignorant violation? Parents, what are they worth to put into your children's hands, to forewarn them against carelessly, ignorantly spoiling their marriage? Young ladies, what are they worth to you, as showing you how to so treat your admirers as to gain and redouble their heart's devotion? Young men, what are these warnings and teachings worth to you? God in his natural laws will bless all who practice, curse all who violate them.

HOW TO MAKE Married Life Happy

SOME ceremony, everywhere, accompanies marriage, usually a religious observance. This custom is, must ever be, coextensive with the race; because inherent in human nature. Marriage is a great affair. Make the most of it, by rendering it the most impressive, pleasurable, and sacred possible. All mankind always have done this; and each mating pair should follow this excellent usage. "Custom is law," and should be obeyed except when it contravenes nature's "higher law."

"A poor wedding for poor folks" must suffice; yet it can be made impressive and delightful with little expense. Those most stylish and costly are usually therefore the less sacred. They eclipse themselves. Extravagance in dress, refreshments, show, numbers, etc., make them poor commemorations of a true conjugal union. Some waste on them money needed for setting out in life. Simplicity is far more appropriate than ostentation. Yet each should accord with the tastes and means of its lord and lady, under whose general directions its managers should conduct its details.

A Home Wedding.

A parental abode, and if convenient, hers is its most suitable place. Only those who hate their parents should marry "on the sly." The "old folks" on both sides, are entitled to its joys; should enter into it right heartily, as if repeating their own; and regulate and defray its expenses. Its subjects should have nothing to do but to enjoy it in full. Make it a season ever to be remembered, and one on which both can look, from every subsequent point of life, down to its very furthest verge, even from "the life to come," with unalloyed pleasure. Not one discordant note should mar its perfect harmony.

Witnesses and guests are indispensable, but a crowd is not desirable. As general an invitation as allotted apartments will accommodate, is best; while a marriage in church is quite too showy and unsocial. The parties may say how few or many, and whom, if they prefer, yet better, by throwing off all responsibility upon parents or others, avoid giving personal offence to any not invited.

And all past and future heart-burnings of all its participants should be scrupulously concealed or conciliated. Those who hold grudges against either should have "no part nor lot" in them, or bury all animosities for the present, and help, not hinder its delightful harmony. This is a good time and way to *bury* old bones, and restore peace. After the marriage ceremony is over, its administrator might appropriately say to them:

"You have now entered together upon relations as sacred and momentous as mortals can assume. Having pondered before taking this eventful life-step, it has now become irretrievable. You have 'put your hands to the plough:' '*go forward*,' and make the most of it. Your life destinies impinge mainly on your right or wrong fulfilment of its relations. Let them not oppress you, yet duly consider their momentous importance; and devote your entire beings to their fulfilment. Having now become an integral part of your very life, they should be your paramount life-work. Thank God that you are married, and pray Him to enable you to live a perfect conjugal life, each day bringing new enjoyment, even as it brings increased affection."

A wedding feast is indispensable; for appetite affiliates with all our functions, and most with the social. Its edibles need not be rich nor expensive; nor composed of many indigestible compounds. Guests need not gormandize or get intoxicated; but should drink something delicious, yet not exhilarating; for the natural hilarity of the occasion is sufficiently intoxicating.



THE WEDDING CEREMONY.

The wedding apparel should correspond with the tastes and means of the parties; and be worthy of being consecrated by the occasion; and kept as a memento forever, to be worn only on special occasions, yet need not be gaudy. That of the bride should set off her person to the best advantage, since no more appropriate occasion can occur.

Behold that charming bride, the central

figure of the occasion! All she says, does and wears should express female loveliness and conjugal affection. A confiding, loving expression toward her lover-husband is her chief ornament and most brilliant jewel. As far as she manifests affection, all is beautiful and appropriate; yet if this is wanting, all is a soulless sham. If she is happy in him, all else is complete; if miserable there, all else is lost.

Joyous Greetings.

Angels might admire as they behold her forsaking girlish associations, friends, even parents, to assume the duties and responsibilities of a wife and mother; and from having been cared for, to care, and become a "helpmeet." A new heart's-core motive is enthroned over the very chit of her being. All her dearest interests are embarked in this life-voyage.

Many cry at weddings whose own have proved fatal, yet all should rejoice; because, if conducted at all aright, nothing else is as joyous as marriage. She has the good wishes of all friends. Would that she knew what is requisite for rendering their wishes prophetic.

The marital rites of different nations in various ages are appropriate here, and might please girls, but, teaching few practical lessons, are left to others.

All four parents should embrace the married pair with open arms in genuine parental affection, warmly expressed; neither sorrowing over the loss of their child, but all rejoicing in having gained another; taking their newly acquired sons and daughters-in-law right home to their heart, and talking or writing somewhat thus:

"DEAR CHILDREN: Your marriage renders you both equally our own son and daughter; and we shall feel and act towards you as if both were 'bone of our bone, and flesh of our flesh.' Call us father and mother, as we shall you son and daughter, and make our house, your home, our table and fireside yours, for a time at least; and always consider us in spirit, as we are now in law and fact, your fond parents.

"Tell us frankly when you may think we wrong you, and we will tell you; that we may nip all hard feelings in their bud, adjust all differences as they rise, and all live together cordially. Nor need you fear to ask our aid.

"Be our daughter's protector, friend, and true husband, overlooking her faults, or correcting them through her affections. That life we have originated and thus far nurtured, and you selected for your wife, we now resign to you. Make the most of her; and dear daughter, having chosen one for life-companionship, make yourself the very best wife you are capable of becoming.

"Let us all bear in mind that pure *affection* is alike our pleasing duty, our glorious privilege, and the heart's-core of all our relations; cherishing which will make all happy. Begging that neither may wound the other's feelings, nor allow their own to be wounded, and bestowing on both our parental benediction, we remain

Your ever doting parents, A. B."

"DEAR PARENTS: With your request, that I will consider myself your son, and call you father and mother, I comply with all my heart, and will do my utmost to fulfil these filial relations; besides doing all I can to promote my wife's happiness, and gratefully loving you who have provided me with so choice an idol to love.

Your affectionate son, C. D."

MR. AND MRS. E. F. TO MR. AND MRS. A. B.

"DEAR SIR AND MADAM: Our children's marriage imposes on us, heretofore related only by ties merely human, the additional duties and feelings due to and from *relatives;* and we hereby proffer the right hand of friendship due to our new family relationship. Let us bury all past differences, cherish only a spirit of mutual affiliation, frequently interchange visits, frankly avow and speedily adjust dissatisfactions, and establish and keep up genuine good feelings. Our latchstring is always out. Our family joins in this tender of cordial sentiments, and promissory endeavors. Hoping this new relationship may become more and more agreeable with time, to all concerned, we remain yours in the spirit of true relatives. MR. AND MRS. E. F."

MR. AND MRS. A. B. TO MR. AND MRS. E. F.

"DEAR RELATIVES AND FRIENDS: To every sentence of your grateful tender of family friendship,



158 "GIVE ME YOUR BLESSING, MOTHER."

we and our family respond in a right hearty amen. We will do our best to meet you half-way in cherishing both true hospitality, and genuine cordiality; open wide our doors and hearts to welcome you and yours; and will vie with you in manifesting those family ties of which the marriage of our children is the heart's-core, and we the corresponding members.

Your cordial family relations,

MR. AND MRS. A. B."

Well-mated couples who begin married life under auspices like these, could hardly wrangle if they tried.

Conjugal dissensions frequently commence about relations. Hers have opposed their union, and said hard things against him, which, magnified before reaching his ear, rouse his anger; and her natural sympathy with them initiates a difference. Doubtless he was more indignant, and she more defensive, than either side required.

Interference from Outside.

Discord thus begun, the crevice now open, out rush the waters of love, only to drown the happiness of both; besides creating a loathsome pestilence, which poisons, maddens, tortures both all their lives: whereas concord between their families would forestall or at once obviate all causes of difference, and redouble their love. How many conjugal animosities originate with outsiders? Their parents should be a self-constituted "committee on the state of the union," to discern incipient differences, obviate them at once, and be daysmen to nurture, instead of interrupting, their children's affections.

But, often, a brother asks his sister to help his new wife start housekeeping. Rendered envious by seeing him lavish so much attention on his wife, and so little on herself, she prejudices him aganist his wife, by pointing out now this, then that fault. Such sisters deserve, if not to be pitched headlong out at the window, at least to be told, "viper, there's the door."

All good sisters will try to heal, not begin or aggravate their differences. What if he is her superior? Does his knowing her faults unmarry them? How much better that, deceived, he should enjoy her shortcomings than suffer inexpressibly from their discovery? His "ignorance is bliss." Her being perfect *in his eyes* about equals her being perfect *per se;* and is immeasurably better for him than her inherent perfection without his appreciation. As he thinks she is, she is to *him.*

Receipt for Domestic Bliss.

If we were to gather up the ingredients that would serve to make the happy home, we should suggest the following: One cup of honesty, one cup of congeniality, two cups of plenty, three cups of respect and four portions of love. Stir the honesty and the plenty to a smooth mixture; add the four portions of love, well beaten; moisten with one cup of congeniality; sift in slowly the three cups of respect. Season with the fruits of the Spirit, and add a dash of the spice of unselfishness and a pinch of the salt of individuality. Lighten with the leaven of constancy. Bake in a quick oven.

Newly-married couples, be careful whom you admit into your sacred domicile for a time. If, to get the one you desire, you must marry a whole family, which may sometimes "pay"—yet better give preference to those unmortgaged—see that they *toe your mark;* and expel instantly any who try to prejudice you or your wife against each other.

Young husband, if a feud should spring up between your mother and wife, choose between them; and either get a divorce from her and *marry your mother;* or else get a divorce from your mother and marry your wife over again. Yet better "forsake father and mother, and cleave to your wife."



AT THE TOILET.

This is far the most eventful epoch of married life, and withal, the hardest. Since beginning courtship just right is thus important, how much more marriage? For whatever is begun wrong, waxes worse.

The Wedding Tour.

A wedding-tour, begun right from the marital altar is more fashionable than sensible; costly; far less enjoyable now than if postponed, and than home quiet; and especially fatiguing and injurious to the bride, whose commencement of her specific marriage relations must needs exhaust all her strength, besides inducing certain physiological changes which, superadded to the exposures and fatigues of traveling, must injure all not extra robust. But, going or staying, give yourselves up wholly to each other. Heretofore you have made love at arm's length: make it now in each other's arms. Take it at its ebb, and waft on in conjugal felicity. Consecrate your "honeymoon" wholly to it, and waive whatever interferes with it.

Yet why not make your honeymoon a honey-annum? Why cut it short in thirty days? Love is now your most important life *business*: then shape business to it, not it to business. That good old Biblical custom which excused every young husband from war, public service, etc., the first married year, requiring him to "stay at home," and "comfort his wife," should be modernized. After your mutual affections are once well started, they will grow on without special nurture.

This is your great life-labor. Think how great; and how infinitely important that it be commenced not about, but *just*, right; which requires time. No great work can be finished up hastily; and the greater, the longer its incipiency. Neglect other things, but take time enough to make this thorough. Surrender yourselves wholly to it. Let it imbue and engross your whole beings.

Young husbands, note. Your doting, clinging, dependant young wife has just forsaken loved home, friends, and parents for you; torn herself from all her girlish associations; thrown her entire being confidingly into your arms; and is pouring out her whole soul into yours. Then should you not take ample time to reciprocate her love, nestle her close to your bosom, and interwine all your and her heartstrings together? Forsaking all has softened, perhaps melted, her soul: then fuse it the more perfectly with your own. Be not so cruel as to shake her off just now for business, or anything else; spend your spare moments with her, instead of old cronies; and give her and yourself one long lovers' holiday.

True Manhood.

This law of mind applies to husbands and wives. Reading together furnishes its easiest and best application. Take long lovers' walks, rides and talks; pick bouquets and press choice flowers as memoranda of these and those pleasant seasons; and commune with each other as vesper's departing twilight casts her mellow tinges over vales and mountains, till "the queen of night" throws her silvery rays over your enchanted pathway, or heaven's star-spangled dome deepens your mutual love by leading you "through nature up to nature's God;" adoring whom together redoubles your love for each other.

Manifest normal male or female nature toward your mate. No man ever did, does or can express true manly attributes to his wife without proportionally enamoring, or unmanly, without alienating her. How much she loves him depends chiefly on how much true manhood he evinces toward her; though

also on how much love capacity she has, and its state. As if in eating one dish supposed delicious you find something bitter and nauseating, or another you suppose common, an inexpressibly luscious flavor, though you know not just *what* you relish and loathe; so as far as you feel and express true manly attributes, you enamor your wife; but as far as you depart therefrom, you excite her loathing and disgust; even though she has no idea just what she likes and dislikes.

Being the true man to her, attains two most glorious human ends—perfects your own manly nature and enamors her. As every man who does business should pride himself on doing it in the best manner possible, so every man should pride himself on being true to manhood, and attaining its end, a wife's devoted love.

Being the true woman enamors a husband and compels him to love her in proportion; yet just as far as any wife departs from a true feminine comportment toward him, she obliges him to taste and loathe her unfeminine bitterness. Many wives take great pains and pride in being "in fashion," yet none to be or act the genuine woman; whereas, being a mere fashionable in comparison with a true woman, is like having only a farthing compared with a fortune.

The Model Husband

GALLANTRY, polite attentions from gentlemen to ladies, is a primal law of love. Thus a man and a woman, a perfect gentleman and lady, meet at table, on steamboat, in parlor, anywhere. Their sexual natures impose on each toward the other a comportment quite unlike that due from either sex to its own. They mutually like, admire each other; this prompts still more gallant attentions from him to her, with their thankful reception. This begets that mutual love which inspires more and more of this identical reciprocal treatment the more they love. They marry; this requires and begets still more of this same comportment, and their becoming parents together more yet.

Think within yourselves just how a perfect gentleman should treat a perfect lady, and she him; and then be and do more so. What is being a gentleman but expressing manly characteristics gently? Think out just what that signifies. Analyze gallantry, a word that has always been used to designate that courteous way male birds evince towards female, always considerate; or the way in which all males naturally treat all females. Note the attentive, kind, generous, tender, sympathetic attentions all model gentlemen bestow on model ladies,

and treat your wife accordingly; and you will soon find her "*dead* in love," literally infatuated with you.

Do gentlemen behave or speak rudely to ladies? or frown, scowl, sulk, or swear, before them? or ever tease, blame, scold, provoke, or satirize them? Are they not refined, polite, attentive to their wants, and complimentary? Would one angry frown distort their pleasant countenances, or rude act mar their polished bearing? Would they not watchfully discern and commend every charm, draw the mantle of charity over all faults, and tear tongues sooner than upbraid? Yet how often do legal husbands commit improprieties and perpetrate downright vulgarities to and before their wives of which they would no more be guilty towards other ladies than forfeit their reputation as gentlemen? Or if they did, they would be banished from genteel female society: and yet wonder why their wives do not love them!

A Conjugal Insult.

For a husband to be ever so extra genteel, gallant, spruce, talkative, gay, lively, complimentary, and much more besides, to other ladies, yet dull, listless, commonplace, unappreciative and inattentive to his wife, is a conjugal outrage which must forestall further love, and kill existing. Yet no matter how gallant to others, provided he is more so to her.

Wives are more ladylike, captivating, charming, lovely, neat, tasty, fascinating, enamoring, at parties than at home, in drawing-room than boudoir, to other gentlemen than own husband; yet wonder why they are not loved more by husband, when these other gentlemen admire them so much. Yet what can as thoroughly disgust any husband of his wife as her slatternly habits, common, indifferent manners, violent temper, or other unladylike deportment to him, with captivating ways towards other men? Let the married apply this *principle* to their own home and dormitory manners and language towards each other.

Did that last sentence you uttered, and act you did, emanate from a true gentlemanly or ladylike *feeling* and spirit? Would the perfect lady or gentleman have said or done that in that way? If so, it redoubled, if not, it deadened the other's affections; besides prompting the same spirit and cast



SELFISH PROPENSITIES LARGE.

of conduct in the other. Would the most perfect husband or wife have said or done what you have just said or done? How many husbands are ungentlemanly, even rude and indecent, to their own wives, and wives so ungenteel to their husbands that they would cut any lady friend who would do the same before any gentleman, and what they would not have done before a negro hostler?

Love can never co-exist with ungentlemanly or unladylike treatment. "This seems all right in theory," you say, "but

imposes on us men a burden too great for any to carry. No husbands do or can treat their wives thus."

Those in love cannot help it. So far from this treatment being a task, it is a luxury. A deep, abiding affection will prompt all this, and much more. This mutual treatment actually does and must proportionally obtain between all who love; yet declines as love wanes. Indifferent manners accompany indifferent hearts; while reversed love renders behavior perfectly hateful. Though he who dislikes his wife may try to and *think* he really does do his whole duty to treat her about right, yet all his actions toward her are abominable, and a perpetual insult; because his feelings are so; though perhaps neither can specify exactly wherein.

Conceited Simpletons.

Pride of character is one of man's best and woman's strongest traits; and in this country, enormous and inflated. All fashions, respectability, society, etc., come from it. Honor, ambition to be first, emulation to excel, love of display, etc., are its products. Only love surpasses it as an incentive to effort. Insults, by reversing it, create the fiercest rage.

In all women it is excessive and inflated —this being one of two indices of the female head;—while its perpetual stimulation by praise from cradle to marriage, usually renders it a real feminine insanity.

Praise delights it; and is due for every good deed. Blame outrages it, and when not deserved, is most unjust. Stealing is no worse than falsely accusing; as is most scolding.

Praise kindles, blame kills love; especially in woman. Nothing equally. How very much she does set by tokens of masculine appreciation, and is cut by depreciation? On both she is indeed a little soft. She was wisely created thus. This trait is inherent in her, and must be respected.

She deserves commendation for all her good, condemnation for few bad deeds. Why is not ambition entitled to its pay for good services rendered, as much as acquisition for goods delivered? Is not neglecting to pay its dues as disgraceful and palpably wrong as not paying a monetary note? When a wife has done her best to get up a good dinner, even though she fails, is she not as justly entitled to her pay in praise as that grocer in dollars for flour? Bestowing it will surprise you that she sets so *very* much by it, in its delighting her so that, unless her love is already chilled out by neglect, she can hardly contain herself.

Though so very easy to cancel these love dues by appreciation, yet how seldom are they "honored?" But how cruelly aggravating, how *very* wicked, to blame her after she has done her best to please? Scolded wives do ten times less; praised, twenty times more, than blamed ones.

A Despicable Grumbler.

A superb wife, married two years, said: "One whole year I tried my best to suit my husband, avoid his blame, and get his praise; but the harder I tried the worse I fared. My meat, too rare yesterday, was overdone today. I fretted, cried, prayed over it till I found I must give up to die, or else fight it off. I chose the latter, and steeled my heart against him and his eternal grumblings, even scolded back; and a wretched life we have lived. If required to choose between another such marriage and death, I certainly prefer to die."

Such cases abound, yet are not all on one side, as many a henpecked husband, who deserves only praise, can attest.

Finding fault engenders more marital alien-



MORTGAGING THE FARM

ations than most other causes combined; stabs love right under its fifth rib; spills its warm life-blood; and must never on any account be inflicted by or on either. Blame from one's own sex is most provoking and unendurable; but from the opposite, absolutely outrageous. No concatenation of circumstances can justify it. This is not the way the sexes were ordained to lessen each other's faults, or promote each other's virtues. All scolding is but driving and threatening; which makes even boys, much more men, defiant and vindictive. Driving contrary mules is easy in comparison.

Happy the home where there is perpetual sunshine! This is the school for the young, the nursery of virtue, the influence that develops the noblest traits of manhood and womanhood.

Most scolded wives deserve praise or pity. Married love-spats are worse than courting, and inexcusable. Loving and spatting are absolutely incompatible and antithetic; and can no more coexist than health with disease, fire with water, heat with cold, or life with death. As disease must conquer the constitution, or the constitution disease, so either love must succumb to these "spats," or they to it. Though "making up" by renewed love pledges may turn their evil into good a few times, yet frequency annuls its virtue. This is but sinning and repenting; which soon turn these new resolutions into animosities.

You must remember the old English saying about the peace that belongs to every house with two "bears"—bear, and forbear.

Your first spat is worse than your house



"I SAY YOU DID!"
"I SAY I DIDN'T—SO THERE!"

burning. *Put it right out*, or it will consume your future conjugal bliss. Even your first blame, if only by implication, and seemingly trifling, is really horrible, in itself and its effects. If you do not have the first, you will never have any; but the first is about sure to breed multitudes of those "little foxes that spoil the vines" of love.

Cruel Neglect.

But you say: "My family requires every dollar I can earn, and business every moment of my time. I must be at its helm, look after all its details, get customers, pay debts, equal my rivals, make a fortune, support style, answer correspondents, watch clerks, collect debts. My time is too precious to be wasted in courting my wife."

Then give her a divorce, and relieve her from this affectional starvation, for this monster wrong is the lesser. If you starved her body merely, you would justly abhor yourself, and be abhorred; yet for thus starving her spirit-nature you are forsooth honored as a pattern of industry and probity! She pines on and dies out, unaware what her real trouble is, or who causes it. She thinks, poor confiding victim, she has a disorder of the stomach, or liver, or nerves; whereas you are slowly killing her off by breaking her *heart*. Lock her up without food, which is to her body what love is to her mind, and you have the enormity of your cruelty and robbery, only in the physical instead of mental form.

Better away with business, dismiss clerks, and abandon speculations, than thus torture and kill your precious wife; for what are they in comparison with her? Ask her and yourself how many dollars will make good this death of her affections. Would you be happier in your wealth without her love, or in her love with less wealth? But you are losing both her love and your dollars. I fling this declaration into the teeth of the largest human experience, that he who duly loves a wife in purity, can do far more work, drive better bargains, wear more and longer, be keener in trade, and every way a better business man, and more successful, than if he neglects her.

Perpetual plodding is fatal to vigorous action. A bow always bent loses its strength. What is made up in time, is lost ten times over in snap and spirit. Hence business men patronize amusements; instinctively craving that recreation which fits them for their next day's struggles. Human nature needs diversion; and the domestic affections constitute its very best form. Their hearty exercise marvellously promotes intellectual vigor.

Take an Illustration.

Let A and B start married life and business together, every way equal in capital, talents, everything, except that A shall heartily love his wife, and spend two hours every day in nurturing her and his conjugal affections, by riding, walking, visiting, going to concerts, lecture-room, anywhere they please, while B plods perpetually over his business and ledgers; in ten years A will be far in advance of B in *dollars*, credit, health, mental soundness and clearness of judgment, in each and all the attributes of physical, mental, and moral advancement; besides having a tenfold better and happier wife than B; in addition to all the *direct* aid derived from talking over proposed plans with her, acting on her suggestions, and being aided in a thousand nameless ways by her silent but efficient co-operation. And this perpetually re-increases with time. Even as a pecuniary investment, nurturing love has no equal.

How infinitely better A's wife, as such,

than B's! However splendid a woman may be by nature, when her affections die or stray, she is of little account as a wife. Would to God every husband could realize how worthless she becomes without affection for him, but how infinitely valuable therewith! and the more so the more affectionate.

Crazy to Make Money.

Hastening to get rich is your fatal blunder. In this rush after the "almighty dollar," besides breaking down your own constitution, you starve out your own and wife's affections. Though she has left home, parents, and all she holds dear for you, yet you leave her for business. She yields to that stern necessity which keeps her loved one so much from her open arms, but she *so* wishes she *could* have at least a little, if *only* a little of your time and soul. It is *so* hard to stay all alone, seeing no one from morning till night, week after week.

And when you are at home, your mind is all on business. You may be gaining finely in dollars, but are losing her love, which now begins to pine. Nothing can prevent it. Her loneliness renders her almost frantic. She little realizes the cause of her misery, or how to obviate it; yet it is slowly but surely eating out her very vitals. There is no telling how much young wives really do suffer in and by this chilling starvation of their young love. And this decline of its fires for want of fuel, allows animosities, which a vigorous love would keep at bay to supplant it.

Besides, you often come home cross-grained, because perplexed with cares and fatigued by struggles. Even if your long-continued and heroic efforts for her have induced your irritability, she sees only the crossness, and suffers just as much from it as if it were not thus induced.

Never bring business troubles across your threshold. Many, provoked by outside vexations, come home surly, and vent on their innocent wives and children the wrath raised by ugly customers; whereas, whatever may be your business cares, you should never allow one angry feeling to enter your domicile. This should be sacred, and kept inviolate from all such venomous reptiles. Deposit business troubles along with your hat and overcoat. Many hang up their fiddle on the *outside* of their front doors, and while cheerful and pleasant abroad, are always grum and dictatorial within; whereas all should take it down on entering.

Her Whole Life.

A wife's affections must die out, unless perpetually refed. This is absolute. Woman lives on love. It is her meat and drink, day and night, from its first dawnings to her latest breath. Without it she does not, cannot, live at all, but only stays and mopes. To starve it is to starve all; while nourishing it nourishes all. It is to her whole being what lubrication is to machinery. Deprived of it, the best of feminine material becomes hardened or deadened; but supplied therewith, even a poor woman makes a good wife.

Words utterly fail to describe the practical difference between the same woman when loving and loved, or hating and hated. Her affections are the key to her whole being, to lock or unlock all the good or bad, and increase both. How many dollars is that child worth? Can money measure its priceless value? Yet is not that wife, if she were all devotion to you, worth quite as much? The social organs are so much larger than acquisition, that no money can at all express the value of a good child, or wife, or husband. And the more they love

or are beloved, the more precious they become.

Mutual alienations detract correspondingly from a wife's value; while hatred renders her as much more a curse than no wife, as she is the better when loving and beloved. Her value rises and falls in proportion to the amount of love interchanged. If a given amount of affection renders her worth a hundred thousand dollars, a hated, hating one is like a hundred-thousand-dollar debt, hanging like a perpetual millstone-incubus, from which there is no deliverance; so that losing a wife's love is a greater loss than her death; because it prevents you marrying another, and chains you to one you abhor. Losing but a little of it is an immeasurable loss, while gaining only a little is worth more than thousands; because it renders you happier; besides augmenting hers and your children's happiness.

"Far Above Rubies."

Count the cost, and strike the balance as to the difference between a lovely and a hateful wife, and then "cipher out" the value of a good one. Solomon placed it "far above rubies," and rubies are far above your store trash. Yet even he did not duly estimate her full value. Next decipher how much that man gains who, by delving early and late at his eternal "business," *spoils a good wife*, in and by letting her affections run down or die out. Next find out how much is gained by *cherishing* them, and thereby perpetually improving both her and yourself. Dollars cannot measure such problems. What shall it profit a man if, in gaining the whole world, he spoils or loses a good wife? And yet many of our shrewdest business men daily pocket this very loss!

Now, and throughout your life, show your affection for her and your admiration of her, not in nonsensical compliment; not merely in picking up her handkerchief or her glove, or in carrying her fan or parasol; not, if you have the means, in hanging trinkets and baubles upon her; not in making yourself a fool by winking at, and seeming pleased at, her foibles, or follies, or faults; but show them by acts of real goodness toward her; prove by unequivocal deeds the high value that you set on her health and life and peace of mind; let your praise of her go to the full extent of her deserts; but let it be consistent with truth and with sense, and such as to convince her of your sincerity.

Empty Compliments.

He who is the flatterer of his wife only prepares her ears for the hyperbolical stuff of others. The kindest appellation that her Christian name affords is the best you can use, especially before faces. An everlasting "my dear" is but a sorry compensation for a want of that sort of love that makes the husband cheerfully toil by day, break his rest by night, endure all sorts of hardships, if the life or health of his wife demand it.

Let your deeds, and not your words, carry to her heart a daily and hourly confirmation of the fact that you value her health and life and happiness beyond all other things in the world; and let this be manifest to her, particularly at those times when life is always more or less in danger.

It is not dangling about after a wife; it is not the loading her with baubles and trinkets; it is not the jaunting of her about from show to show, and from what is called pleasure to pleasure; it is none of these that endears you to her; it is the adherence to that promise you have made her: "With my body I thee worship;" that is to say, respect and honor by personal attention and acts of affection. And remember, that the greatest

possible proof that you can give of real and solid affection is to give her your time, when not wanted in matters of business; when not wanted for the discharge of some duty, either towards the public or toward private persons.

Amongst duties of this sort we must, of course, in some ranks and circumstances of life, include the intercourse amongst friends and neighbors, which may frequently and reasonably call the husband from his home; but what are we to think of the husband who is in the habit of leaving his own fireside, after the business of the day is over, and seeking promiscuous companions in the saloon or club-house!

They Prize Fidelity.

Now, if all young men knew how much value women set upon this species of fidelity, there would be fewer unhappy couples than there are. If men have appointments at the White House, they never dream of breaking them; and we can assure them that wives are as sensitive in this respect as Presidents or Cabinet officers. No man has a right to sport with the feelings of any innocent person whatever, and particularly with those of one who has committed her happiness to his hands.

The truth is, that men in general look upon women as having no feelings different from their own; and they know that they themselves would regard such disappointments as nothing. But this is a great mistake: women feel more acutely than men; their love is more ardent, more pure, more lasting, and they are more frank and sincere in the utterance of their feelings. They ought to be treated with due consideration for all their amiable qualities and for all their weaknesses, and nothing by which their minds are affected ought to be deemed a trifle.

When we consider what a young woman gives up on her wedding-day; she makes a surrender, an absolute surrender, of her liberty, for the joint lives of the parties; she gives the husband the absolute right of causing her to live in what place, and in what manner and in what society, he pleases; she gives him the power to take from her, and to use for his own purposes, all her goods, unless reserved by some legal instrument; and, above all, she surrenders to him her person.

Examples of Self-Sacrifice.

Then, when we consider the pains which they endure for us, and the large share of all the anxious parental cares that fall to their lot; when we consider their devotion to us, and how unshaken their affection remains in our ailments, even though the most tedious and disgusting; when we consider the offices that they perform, and cheerfully perform for us, when, were we left to one another, we should perish from neglect; when we consider their devotion to their children, how evidently they love them better, in numerous instances, than their own lives; when we consider these things, how can a just man think anything a trifle that affects their happiness?

A normally-sexed woman loves to be loved and caressed by him who has her heart, and "that before folks," except that custom frowns thereon. Women, tell the world in general, and your own husbands in particular, just how you desire them to comport themselves toward you.

The married should love each other just as young lovers do, only as much more as they are older. Then, whatever it is proper to *feel*, it is equally proper to *manifest* "before folks."

It is manly for a man to love his wife. He

was created a man expressly for this. Then is it not as manly to *express* this love? and equally feminine in her both to tenderly love her husband and manifest her outgushing tenderness? Is love loathsome, that it must be stifled? It is the purest of emotions. Only when it is perverted is it indelicate.

And if husbands and wives would but manifest more love in purity, they would experience far less of its animal aspect. These young lovers are true to the mating instinct; but discontinuing these attentions proclaims the paralysis of love; for they can no more help this its natural language and manner, in proportion as they love, than help laughing when merry or shivering when cold.

The Model Wife

YOU can make your home what you wish it to be. You can have the good sense, the tact, the commanding influence that will mould your home and give it character. What you are your house will be. If you are weak and worthless, your domestic life will be a failure. If you are a true woman, a true wife and mother, the grand effect will be seen on everything around you. What, then, are some of the traits that belong to the model wife?

CHEERFULNESS.

Is there not a demand on our whole nature for general cheerfulness? It is not only the "sunshine of the soul," but that of the body. The truly cheerful are not only happier in their minds and spirits, but also in their very bodies. The brain and nervous system play their part in the great drama of physical life better; the heart and stomach and lungs work better. Indeed, all is better throughout.

Is not that a duty which is productive of so much happiness? But can that be a duty which is not in our power to perform? It were surely an impeachment of the wisdom and goodness of God, did he require us, in his providence or in his word—by his natural or his revealed law—to do that of which we are incapable.

A Plant of Beauty.

We consider cheerfulness, then, as a matter of duty; and, of course, as in a great measure in our power. It makes us happier ourselves; it enables us to reflect more happiness on others. Let young wives especially strive to cultivate it. It is in its nature a perennial plant; and if it is not such at the present time, it is because it has degenerated in a degenerate world. Let it be restored to its pristine beauty; and let the world thereby—in connection with other means tending to

the same end—be restored to what it was before the loss of Eden.

DISCRETION.

This is a virtue which should belong to every one. Above all, do we like to see the young wife discreet. Discretion not only heightens the pleasures of her existence, but adds greatly to her reputation in the just estimation of the wise. Coupled with modesty it more than doubles her charms.

Let discretion then be studied. Let it be studied, too, for its immediate as well as remote benefits. It will, indeed, bear fruit more abundantly in later life ; but it will not be without its value in youth. It is a plant which it were worth while to cultivate, if human existence were more frail, and life more uncertain of continuance that it now is.

MODESTY.

Of all the qualities appropriate to young wives none is more universally esteemed than modesty. And what has been, by common consent, so highly esteemed, we cannot undervalue. Indeed, we do not think it has ever been over-valued, or that it can be.

We have been somewhat amused—not to say instructed—by the following remarks on this trait of female character, from the pen of one who is not only a philosopher, but a physiologist. They are not the more interesting, perhaps, because they are somewhat new ; but neither are they less so.

"Modesty establishes an equilibrium between the superiority of man and the delicacy of woman ; it enables woman to insure thereby for herself, a supporter—a defender. And while man thus barters his protection for love, woman is a match for his power ; and the weak to a great extent, governs the stronger.

"It is probable that modesty derives its cause in woman, from a certain mistrust in her own merit, and from the fear of finding herself below that very affection which she is capable of exciting, and of which she is the object. Modesty compels her love to assume that form by which nature has taught her so universally to express it—that of gratitude, friendship, etc. Modesty is a means of attraction with which nature inspires all females."

Under this head we will just add, that since by modesty the weaker govern the stronger, it is of immense importance that



THE IDEAL WIFE.

Admirable type of a well-balanced woman ; above the medium height, shoulders broad, chest full ; neither spare nor stout ; expression intelligent, amiable, and indicating force of character combined with prudent reserve ; affectionate, dignified, and contrasting strongly with a vain, simpering nonentity.

woman should know the true secret of maintaining her power ; and also by what means she is likely to jeopardize that power. And without undertaking to determine what shall be the precise rules of female action, and the precise limits of the sphere within which the Author of her nature designed she should move, is it not worth the serious inquiry, whether she does not, as a general fact, lose influence the moment she departs widely from the province which nature seems to have allotted her?

DIFFIDENCE.

This trait, though nearly related to modesty, is far from being the same thing, its character having been more frequently brought in question than that of modesty. And yet it seems equally valuable. It gilds what modesty graces; and polishes what modesty improves.

Let not the reader confound modesty and bashfulness; for they are by no means the same thing. Modesty is as much opposed to impudence as anything can be; and yet it is certain that impudence is often conjoined with bashfulness. Not so often, to be sure, in the female sex, as in the other, and yet such a phenomenon is occasionally witnessed, even in woman.

Bashfulness is usually the result of too low an estimate of ourselves; whereas, true diffidence only leads us to value ourselves according to our real worth. Diffidence makes us humble, but bashfulness sometimes makes us mean; at least, there is danger of it. It is, at all events, of doubtful utility; and though we would not denounce or condemn it, we would urge all to endeavor to rise far above it.

But we would endeavor to cultivate and encourage everything which belongs to true diffidence. It will assist modesty in performing her angelic office; and the influence of both, united, may save from many a pang.

COURAGE.

By courage we do not mean that trait for which man is constitutionally as much distinguished, as woman is for the want of it. We mean not a courage to meet and surmount physical difficulties, and encounter outward and physical dangers. We mean, on the contrary, that moral courage which is confined neither to sex nor condition.

Not that physical courage is to be despised, even by females. On the contrary, we think it is a trait of character which is quite too much neglected in female education. It is not only lamentable, but pitiable, to see a female of twenty, thirty or fifty years of age, shrinking at the sight of a spider or a toad, even when there is not the slightest prospect of its coming within three yards of her.

Nor is it as it should be, when a young woman, already eighteen or twenty years of age, has such a dread of pigs and cows as to scream aloud at the sight of one in a field, so well enclosed that it is not possible her safety could be endangered were the animal ever so malicious. Such unreasonable and foolish fears ought by no means to be encouraged; on the contrary, she who finds herself a slave to them ought to suppress them as fast as possible.

Groundless Fears.

This is, indeed, an important but much neglected part of female education; and she who is a sufferer therefrom will do well to derive a hint from these pages. The unreasonable fears of which we speak are by no means confined to the sight of toads, or spiders, or pigs, or cows. We find them more or less frequently and in some form or other in nearly every family. Some are unreasonably afraid of dogs and horses; others of cats or snakes; others, again, of the dark, or of being alone by night or by day.

Let us not be understood as saying that no fears are to be indulged in regard to any of these things; it is only an unreasonable and foolish degree of fear that should be guarded against. A cow or a horse feeding quietly in a pasture, and separated from you by a stout fence which no animal in any ordinary circumstances is wont to leap, is not



THE WEDDING PROCESSION

a proper object of fear with a rational person over twelve years of age.

But it is *moral* courage that we would inspire in women. She has patience, and perseverance, and fortitude—why then may she not add to these moral courage! What man has done, man may do, has been a thousand times said; and the remark is not less applicable to woman than to man. What woman has done, woman may do. But woman, in numerous instances, has possessed moral courage. She has been known more than once to "face a frowning world," or to oppose some of its tyrant fashions. We could mention more than one who has thus evinced true moral courage, and set her sex a glorious example, which not a few of our readers might do well to copy.

Let woman dare to do right—whether fashionable or unfashionable. Let her dare to do so in the smaller no less than in the larger matters of life. Let her dare to obey God, and the laws of God, both natural and revealed—both within and around her—rather than the laws of any man or set of men. Let her do this, and she will evince true moral courage; a courage as far surpassing the highest efforts of physical courage or prowess as right surpasses might; virtue, vice; or purity, impurity.

THE TEMPER.

Nothing is more unpleasant—slovenliness, perhaps, excepted—than a bad temper. We beseech every one who is so unhappy as to possess such a temper to pay particular attention to what we are about to say on this interesting and important topic.

Some women seem entirely to overlook the consequences of an ill-temper. These are numerous—too numerous to be mentioned here. We shall only say that such a temper is no less destructive—in a slow way—to the health of the body than it is to the mental faculties and the affections.

Some suppose their ill-temper to be constitutional, and this serves them as an apology for neglecting to govern it. They seem to regard it as so wrought into their very structure, that it will hardly be possible ever to eradicate it. They are condemned by inheritance, as they appear to suppose, to a perpetual war within—in which the most they can hope for is an occasional victory.

Perfect Self-Command.

Now let us tell every woman who has imbibed this erroneous and dangerous notion, that the command of her temper is not placed beyond her reach. She may acquire the most perfect self-command, even in this respect, if she will. Not in a moment, nor in a day, it is true. The work may be the labor of months or of years. Still the battle can be won: a permanent and final victory can be achieved.

The very general idea that single persons somewhat advanced in life, especially females, become habitually impatient or ill-tempered, has too much truth for its foundation, though it is by no means universally true. Nor is it ever necessary that it should be so.

We wish every person could be induced to study deeply the causes which operate on mankind to originate or perpetuate a bad temper. They are numerous—exceedingly so. It is not necessary to charge much upon our ancestors. The causes may much oftener be found within our own minds and bodies, would we but look for them there. We harbor or perhaps indulge a thousand unpleasant feelings from day to day, not seeming to know, or at least to realize, that as small streams form larger ones, so these first risings of anger lead to its more outbreaking forms.

Not a few of the instances of irritability, fretfulness, impatience and melancholy have their origin in physical causes—in errors in regard to exercise, sleep, air, temperature, dress, eating, drinking ; and some have their origin in mistakes about the theory or the practice of religion. Some originate, too, in disappointed love. In short, their sources are well nigh endless.

AVOID BAD DIET.

It is in vain, or almost in vain, to hope for any radical improvement in our physical, intellectual or moral condition except in proportion as the body and the bodily appetites are kept in proper subjection to right reason and religion.

Here we must again urge upon every woman the duty of studying the laws of health, and especially those of temperance. The knowledge thus to be obtained would be of exceeding great value to her in the government of her passions and appetites.

It is related that a teacher in Boston, whose general course of discipline was quite mild, was sometimes so much affected in his temper by high-seasoned or over-stimulating dinners, as to be petulant and passionate, even to blows, immediately afterward.

Now, whether this was often the case with the individual in question, we cannot say. This, however, we may affirm with the utmost safety and confidence—that many an individual who finds her passions or her appetites more than usually troublesome or rebellious, would do well to look for the cause in the bad air which she breathes, the bad foods or drinks she uses, or in something else in herself or in her habits which might have been prevented.

We press this part of the subject upon the consideration of women because it concerns not them alone, but a host of others. No one liveth to himself, says an apostle ; and the remark is quite as important in its application to the young woman as to any other individual.

One reason why we urge it is because we are almost universally referred to moral means and moral considerations alone, in order to keep in subjection the body—its passions and appetites—and seldom, if ever, to a proper attention to our food or our drink, our air, our exercise, or our sleep. Nay, the hopes of the young, in regard to keeping the body in subjection, are sometimes completely paralyzed by the grave assertion that the strength of our passions and appetites is constitutional—as much our inheritance as the color of our eyes or the contour of our physiognomies, and almost equally unalterable.

Outrageous Cookery.

Now we would encourage no woman to expect too much of "temperance in all things," without the co-operation of the moral powers, and especially of the will. But we would encourage her to strict temperance for her own sake and that of others. We would say to her once more, that in proportion to her obedience to the laws of health, in regard to air, exercise, sleep, temperature, study, food, drink, clothing, etc., will be her ability to govern herself according to right and reason. The simpler her diet, for example, and the more free it is from extraneous things—as fat, condiments, etc. —the easier will it be to keep herself in proper subjection to herself—the body to the immortal spirit.

One of the most powerful and ever active causes of that slavery of the soul to the body which every person of sense must perceive and deplore, is our unnatural and artificial cookery. Had it been the aim of all the

cookery in the world to make it as bad as possible for the health of body and soul, we know not that things could have been worse than they are now. Very few things, indeed, are made more palatable, more digestible or more nutritious by it—the legitimate and only ends of all the efforts of our fashionable cookery. On the contrary they are made, almost universally, a great deal worse for us.

Let the woman who would do good in the reformation, elevation and eternal progress of herself and those around her, not only study deeply the laws of health and life, but let her tax her powers of reasoning and invention to see if it is not possible to remove the cause of so much mischief from our parlors, our sleeping rooms, our kitchens and our tables. Much must be done in this respect before the world can become what it ought to be; and woman must lead the way —woman of some future generation, if not of the present.

FRUGALITY.

Economy is an old-fashioned word, which, like the thing for which it stands, is fast going into disrepute; and it will require no little moral courage in her who has anything of reputation at stake to commend it.

"Is there not something connected with the idea of economy which tends, necessarily, to narrow the mind and contract the heart?" This question is often asked even by those whom age and experience should have taught better things.

There can be no doubt that a just measure of frugality and economy is a cardinal virtue, and should be early inculcated, even though it cost us some time and effort. It should be practiced by every wife who is of necessity housekeeper and manager. Not a few are exceedingly improvident, and often they are wasteful. The world seems to be regarded as a great storehouse which can never be exhausted, let them be as extravagant as they may. They forget entirely the vulgar but correct adage that "always taking out of the meal tub and never putting in, soon comes to the bottom"—and seem to take it for granted there is no bottom to their resources.

Our grandmothers—our great grandmothers, rather—were not ashamed of frugality or economy. They were neither afraid nor unwilling to do what they knew to be right, simply because it happened to be unfashionable. We are not, indeed, of that number who place the golden age exclusively in the past. We can see errors in the conduct of our grandmothers. But we also see in them excellencies; many virtues of the sterner, more sober sort, which have been bartered for modern customs—not to



THE ECONOMICAL WIFE.

say vices—at a very great loss by the exchange. What we have thus lost, we should be glad, were it possible, to restore.

BE SYSTEMATIC.

There is hardly anything which the majority of our young women hate—frugality and economy, and the study of themselves, perhaps, excepted—so much as *system*. In this respect a few of our best schools have, within a few years, attempted something; and, in a few instances, with success. We could mention several schools for females whose teachers have done much more good by the habits of order and system they have inculcated and endeavored to form than by the sciences they have taught.

The tendency of this excellent feature of a few of our institutions is, however, pretty effectually counteracted by the general feeling of the public, that the school is but a place of painful though necessary restraint; and that when it is over, study is over—and with it all the system which had been either inculcated or practiced. And though not a few who have been thus compelled to live by system for two or three years see plainly its excellent effects, and both they and their parents acknowledge them, still the school is no sooner terminated than everything of the kind is very likely to become as though it had never been.

How important then, how supremely so, is right education! How important to sow, in the earliest years, the seeds of a love of order and system! How important to young women especially that this work should not be deferred; since if it is so, it is most likely to be deferred forever.

We know full well that here and there a housekeeper, convinced in her conscience that she can do vastly more for herself and others, as well as do it better, by means of system than without it, attempts something like innovation upon the usual random course which prevails about her. She resolves to have her hours of labor, her hours of recreation and her hours of reading and visiting. She believes life is long enough for all the purposes of life. She is resolved to be systematic on Sabbath and on week-days; in the common details of the family, in dress, and in regard to the hours of rising, meals and rest.

But she has a herculean task to accomplish—no small part of which is to bring her husband and the other members of her family to co-operate with her. Yet amid every discouragement she perseveres, and at length succeeds. Is not such a victory worth securing?

INDUSTRY.

What ordinary virtue is there more commendable than industry? On this account and in this view it is that well-disposed parents sometimes employ their children in a way not absolutely or in itself useful to them, for the sake of the general habit. Such parents are certainly excusable, even if their example should not be regarded as commendable or as worthy of being followed.

Dr. Good, the well-known theological, philosophical and medical writer, avows the belief that man is naturally lazy; that he would not so much as lift a finger if he could help it; and that all his activity grows out of a desire to avoid present or future suffering or pain. Perhaps this is carrying the matter rather too far; since we see young children positively active, not so much from the desire of avoiding pain, as from that of procuring pleasure. But however untrue it may be in regard to children, it is unquestionably true of many adults; and of some it is to be feared of both sexes.



Of all lazy persons, however, we dislike most to see a lazy young woman. Destined by her Creator at once to charm, instruct and improve the world around her, by her looks, her words and her actions—and this to a degree which no female has ever yet attained—how exceedingly painful it is to see her floating along the stream of inaction or insignificance, without making one considerable effort to arouse her faculties—bodily, mental and moral—from their half dormant condition.

Too many females who are trained in the bosom of ease and abundance, have no idea of any attempts at benevolent effort, or even of active, untiring industry. If they are not more selfish than the other sex, they are scarcely less so. They live but for themselves, and seem to desire no more. Granting, as we sometimes do, that this is the fault of their education, is it therefore the less pitiable?

HEALTHY MOTHERS.

Robust health in wife and mother is almost as indispensable as in husband and father. He requires one who *helps*, not hinders, and can take part in their mutual labors and interests. Animal vigor is the paramount prerequisite of everything terrestrial. Without it none can think clearly or love heartily. A nervous woman may cry frantically when you leave her, but these morbid tears are worse than none. Whether a wife is chosen to love and be loved, to live with or help along, or even as a drudge, a healthy one is a hundred times better than a sickly.

Rosy children constitute the great ultimate of marriage, and are worth a thousand-fold more than sickly ones; but their constitutional health depends much on that of their mother, whose prime office it is to impart vitality to her young. How can she impart what she does not possess? Those who marry weakly girls may expect their little, feeble, sickly children to cry night and day, require continual nursing and doctoring, and then torture them with fears lest any atmospheric change should blow them into a premature grave, after parental heartstrings have become fully entwined around them.

LIVE FOR AN OBJECT.

Idleness begets inanity. All, however talented, require to be inspired to effort by some great life-object. Better labor to augment even unnecessary wealth, than do nothing. Those who live on their income should choose self-improvement, study, politics, public business, reform, private or public improvements, or some life-labor on which to spend their force. "Better wear out than rust out" by inertia; for rust consumes faster than wear. Those who do not need to work for a living, should at least for fun; but work anyhow, at something. "He that will not work, neither shall he eat." Not that manual labor is absolutely necessary, but that all must do something. Girls, by no means marry drones.

Nature does not exempt women from this executive necessity. They may choose what, but absolutely must do something. And what comes as natural as housekeeping? Not but that they can be good wives yet poor housekeepers, or good housekeepers yet poor wives; but that good wives are far better for being also good housekeepers. Houses must be kept, and wives do something, then why not they keep houses? Hirelings may answer, but how much better are owners?

No family is fit to live in unless its wife and mother is at the head of its wardrobe, laundry, storeroom and kitchen. Obviously she should prepare her children's food with

her own hands, for this trust is too important to be delegated; then why not also that of her husband with it? In the true family it is mother here, mother there, mother everywhere and for everything. If a child hurts itself, or a bleeding finger requires doing up, or any advice is needed, all involuntarily run right to "mother." She is the great "sympathetic nerve" of the whole family, its natural indoor head and director, because she should love husband and children devotedly; and love always involuntarily does and keeps doing for those beloved. And this increases her and their affections. Educating woman for ornament is a cardinal modern error; whereas nature requires her to become a helpmeet.

A good wife must take right hold, with head, heart and hands, of whatever her husband does; yet the fashionable idea is that he must do *all*, while she only glitters in fashionable attire. Not that she should not be ornate. Her natural beauties require to be shown to the best advantage. That which *is* best generally looks best, which fruits illustrate. Whatever is ornamental is therefore useful. Use is ornament, and ornament use, the world over. The two combine in nature, and should in a wife; who is never as charming as when doing something to render others happy. Give me one who can bake and wash, pick and cook esculents, make bread and butter, cut and sew, and cater to family creature comforts. Not that half the domestic work now required is at all necessary, nor that a wife should only know how to work; but that she should unite the housekeeper with the lady and wife.



House Plants and Flowers

HOME should be bright and happy; it should have everything to make it cheerful and pleasant. Flowers are decorated with all the colors of the rainbow; plants breathe, and their breath is perfume. To cultivate these is not only a pleasant pastime; they give beauty to the house and garden.

The Beautiful Flowers.

Blooming, blooming everywhere,
In country and in town;
Blooming for the good and wise,
Looking out in rare surprise,
Laughing with a tender look,
Nodding from some cosy nook,
Dreaming by some idle brook,
Every flower an open book,
Every one a precious prize,
Smiling through the varied dyes—
Scarlet and gold and brown—
God's sweet thoughts of gracious care.

Blooming, blooming, everywhere,
Where quiet reigns, or strife;
Lifting faces fair as day,
Happy greeting on our way;
Blooming where the children play,
Blooming where fond lovers stray,
Blooming in the hush of night,
Trailing robes of crystal light
O'er the garden's green and gold;
Blooming for the young and old,
Blooming for the wasted hand,
Blooming free in all the land;
Fringing the world so noiselessly,
Lent to us most bountifully;
Frail blossoms full of life,
God's sweet thoughts of gracious care!

Blooming, blooming everywhere,
In haunts of woe and sin;
Still their mission they fulfil,
Born to do our Father's will—
Little tokens from above,
Little fragments of his love,
Who can tell what soul shall take
Some new courage for their sake,
Bearing midst the sun and showers
Increase from these fragile flowers?
Thus, the blossoms' souls abide,
When the gates above swing wide,
And he bears with him the while,
Mem'ry of the bright flowers' smile—
As pilgrim enters in—
God's sweet thoughts of gracious care.

MRS. CHARLOTTE E. FISHER.

Our American woods are tangled with creeping vines; our meadows are beautiful with blossoms; rough country roads are ornamented with flowering shrubs; our hot houses look like tropical gardens. Immense sums of money are invested in these floral beauties whose glory lasts, perhaps, only for a day, but they more than pay for themselves, and the world would be dismal without them.

The following are some plain directions for the care and culture of the choicest of these treasures of nature.

THE LILY.

All the species of this splendid genus, with which we are acquainted, may be considered worthy of a place in every good collection of plants. Many of the species are well-known, while a greater number are not often seen in our gardens.

The Lily is an interesting flower to the young florist as well as the botanist, on account of the simplicity of its structure and magnitude and distinct character of its different parts and organs. The root of the Lily, or what is generally denominated the root, is a scaly bulb, the scales being laid over

each other, inclosing the germ, or bud. The bulb is not a root, strictly speaking, but a bud containing the embryo of the future plant. The roots are thrown out from the bottom of these bulbs, or buds, and, unlike the fibres of the Tulip, are perennial; and on their strength depends, in a great measure, the vigor of the future plant.

Bulbs, long kept out of ground, are very much weakened, and a number of years will elapse before they recover strength to bloom in great perfection. After the flowering of the Lily, in August, the foliage of many species decays; the bulbs then are in the most perfect state for transplanting. If they are permitted to remain long after this, and the foliage begins to start again, they will not bloom so strong the next year. The Lily should not be moved any oftener than necessary. It is not like the Tulip and many other bulbs, which are not injured, but rather improved, by taking them up annually after flowering.

The Lily will do well in any well prepared border or bed. To have them in perpection, the soil should be excavated eighteen inches deep, and filled with a compost of peat or swamp muck, undecayed manure or leaf mould, a foot deep; the remaining six inches may be peat and rich mould. The bulbs of strong growing Lilies may be planted from four to five inches deep; and weaker sorts from three to four inches. In they borders, three bulbs, of the stronger-growing varieties, are enough for one group, or five, of the weeker sorts. They have a pleasing effect when planted in masses; or they may be planted in beds. Most of the species are quite hardy; but they will all be benefitted, and bloom more strongly, provided they receive a covering of rotten manure before winter sets in.

The Old White Lily.—This species has always been considered the emblem of whiteness, and is too well-known to require any description, A mass of White Lilies is always beheld with admiration, and they perfume the air with their delicious fragrance. The White Lily is, therefore, indispensable, and should be found in every garden. It sometimes attains the height of three or four feet, and is in flower about the first of July.

Turk's Cap Lily.—There are many varieties of this species; some with pure white, others with purple, spotted, or variegated flowers. The petals are very much reflexed, giving them the appearance of caps. In strong soil, and the roots well established, the stems are sometimes thrown up from three to five feet, producing twenty or thirty flowers, flowering in July.

The Gold-striped Lily.—There are two varieties of garden White Lily with striped leaves, one having yellow, the other white striped foliage; both pretty in a collection.

The Umbel-flowered Orange Lily.—This is a strong-growing species, producing quite a number of large, upright orange flowers, with rough interior. In contrast with the White Lily, it makes an imposing appearance. It flowers about the first of July.

Tiger-spotted Lily.—A very common, strong-growing species; but very showy, having fine, reflexed, orange flowers, with black spots. It has the peculiarity of producing small bulbs in the axils of the leaves. It grows from four to six feet high, flowering in August, and is a suitable plant for the shrubbery as well as the border. It is very easily propagated, as all the axil bulbs, when planted in the ground, soon produce flowering plants.

Lily of the Valley.—An elegant and delicate, sweet-scented plant, which for ages has been a favorite flower, and highly prized. It succeeds well in the shade in any soil, and

soon spreads itself, by its slender, creeping roots, beyond the desire of the cultivator. It flowers in May and June.

The Japan Lily.—This magnificent species of Lily, and its varieties were formerly treated as green-house plants. They are found to be as hardy as our common Lilies, and will, therefore, prove a great acquisition to the garden. These Lilies emit an exquisite odor.

Few plants are more handsome or attractive than the Japan Lilies. They produce a gorgeous display, either in-doors or out; and as they are quite hardy, they may be liberally planted in the open border, and thus constitute one of our best autumnal flower-garden plants.

Their propagation is simple and certain. The bulbs may be separated, and each scale will eventually form a new bulb. This separation should be effected when the flower stems are withered. The scales should be stuck into pans of silver sand, and placed in a cold frame or pit. After remaining one season in this position, they should be planted in a prepared bed of peat moss, and a little silver sand intermixed with it; thus treated, the bulbs will soon grow large enough to flower.

VERBENAS.

This plant is a native of Buenos Ayres, growing through a very extensive tract of country. The dazzling, brilliant, scarlet flowers cannot be exceeded by any other plant yet introduced into this country; and blooming from May to November, in the open air, with us, makes it one of the most desirable plants in cultivation.

Innumerable splendid varieties have been raised, of every color and tint, excepting yellow and blue. Some varieties are of a bluish-purple, ruby-purple, lilac and dark-purple, rose, scarlet, crimson, white, white with red eye, scarlet with purple eye, rosy with red eye, shaded, striped, etc., in fact, every shade of the colors named. The habits of all are similar, naturally prostrate and creeping plants, taking root freely wherever the stems come in contact with the ground, and sending forth innumerable clusters of their many-hued, brilliant flowers from May to November.

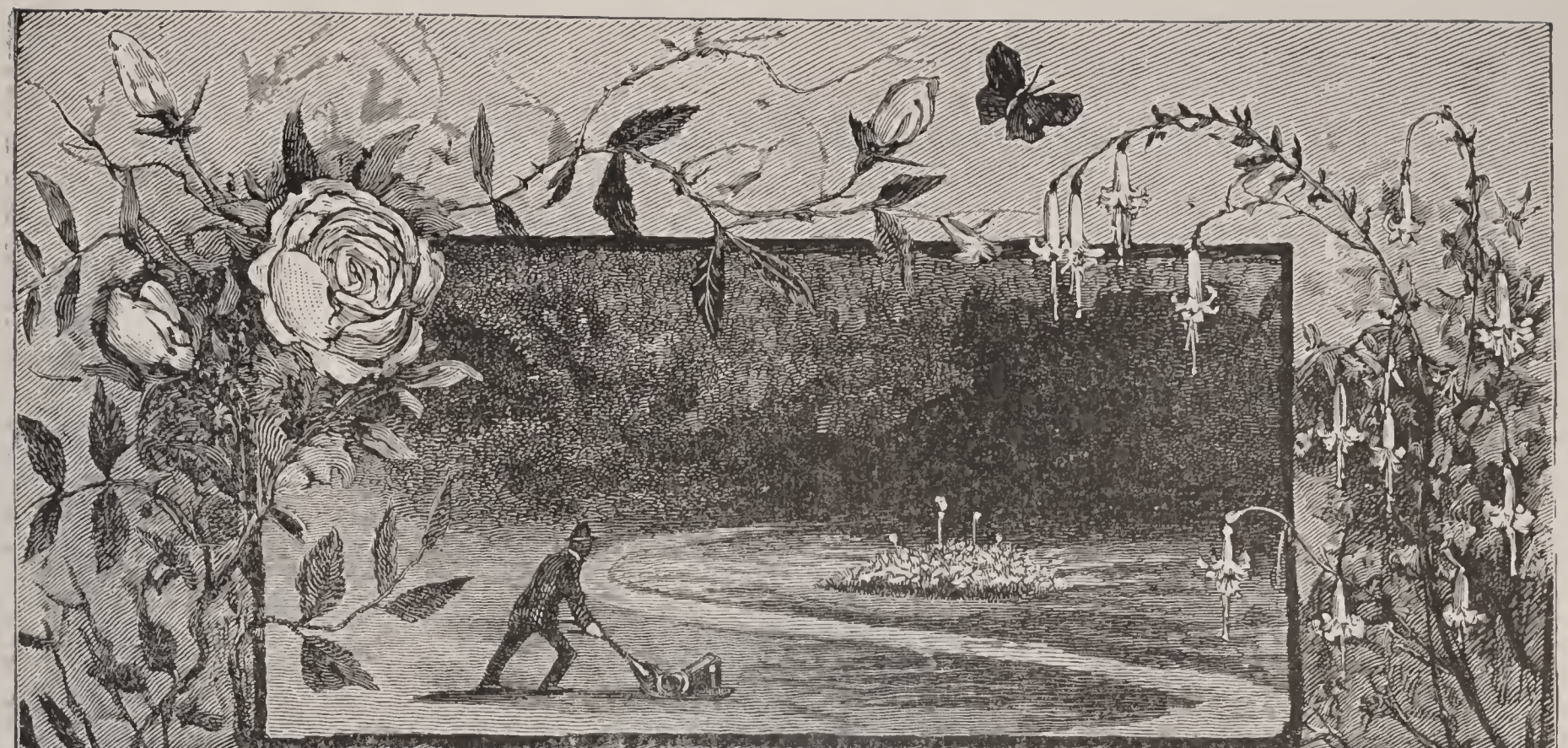
It is kept with difficulty through the winter, except in rooms or in the green-house. In the cellar the roots soon perish; nor are any of them quite hardy enough to stand the winter.

They are all so easily raised from cuttings that they can be obtained at any green-house, for about two dollars a dozen for small plants, which, when turned into the ground in June, soon make large plants, and by October will be three feet across. They continue to flower after severe frosts, and are among the last lingering flowers of autumn.

They flower from seed sown in the open ground, in May, the same season, commencing their bloom in August. Seedling plants produce seed in abundance, but those that have been a long time propagated from cuttings lose that power in a great measure. There is no end to the variety from seedling plants. To have them come early in flower, the seed may be brought forward in the frame. No plant equals the Verbena for masses, particularly when grown in beds cut out on lawns, as the brilliancy of the flowers contrasts finely with the green grass.

PETUNIAS.

Few things in the garden will make more show throughout the entire season, even after quite severe frosts, than a bed of Petunias from a paper of seed marked "Choicest Mixed from Show Flowers." They will produce a profusion of flowers, charming one from day to day with their variations of





VOICE OF THE FLOWERS.

Yes—flowers have tones—God gave to each
A language of its own ;
And bade the simple blossom teach
Where'er its seeds are sown ;
His voice is on the mountain's height,
And by the river's side,
Where flowers blush in glowing light,
In lowliness or pride ;
We feel, all o'er the blooming sod,
It is the language of our God.

MRS. ESLING.

markings, and of color. Some retain their distinctive characteristics, while with others they are changeful as the kaleidoscope. Stripes, blotches, sprays, white throats, green edges, they are lovely. Then there are the double sorts; purple with white spots, white with purple; rose color, white, purplish-crimson margined with white; lilac veined with purple; white with stripes of purple in the center of each petal, some exquisitely fringed; large and full as a rose, and some almost as sweet.

The Petunia is divided into three distinct classes, the Grandiflora, Small Flowered and Double.

The Grandiflora varieties have a strong succulent growth, the flowers are not so numerous as some others, but are very large and double, frequently measuring three inches in diameter, and some kinds are exquisitely marked with various shades of violet, purple, maroon and scarlet upon white ground; some striped, others bordered, some marbled, some deeply fringed. The double Petunia gives no seed, and it is only by fertilizing single flowers with the pollen of the double that seed can be obtained. But Petunias of all kinds are easily multiplied by cuttings.

The small Flowered class are those that make our gardens so attractive with their varied hues and markings. Some of the new hybrids are of wonderful beauty.

A new double-fringed Petunia is named after President Garfield. It is thus described: Color, light purple veined with deep purple magenta, edged with a broad band of an exquisite shade of green. Very novel in its appearance and a new color in double Petunias; flower very large and deep fringed. Plants strong and vigorous; one of the finest sorts ever offered, and worthy of a place in every garden. It is a floral beauty of the highest order.

VIOLETS.

"Violets, sweet tenants of the shade,
In purple's richest pride arrayed,
Your errand here fulfill;
Go bid the artist's simple stain
Your lustre imitate in vain,
And match your Maker's skill."

This is an extensive genus of plants, of dwarf habits, suitable for border or rock-work. There are many indigenous species which flourish well in the garden, and will repay the trouble of collecting them from the woods, meadows, and pastures.

The Sweet-scented Violet should not be wanting in any collection of plants, on account of its fragrance and early appearance. A single flower will perfume a large room. The flowers appear in April, and continue through May. There are the single white and single blue, and the double blue and white varieties; the double sorts are the most desirable; they succeed best in a shady, sheltered place, and are rapidly multiplied by divisions of the plant.

PANSIES.

"Open your eyes, my Pansies sweet,
Open your eyes for me.
Where did you get that purple hue?
Did a cloudlet smile as you came through?
Did a little sunbeam bold
Kiss on your lips that tint of gold?
Tell me the mystery."

The Heart's Ease, or Pansy, is a general favorite—an old acquaintance with every one who has had anything to do with a flower-garden. It begins to open its modest but lively flowers as soon as the snow clears off in the spring, and continues to enliven the garden till the snow comes again. The flowers are in the greatest perfection in May and June. The burning sun of summer is unfavorable for their greatest beauty; but in autumn they are fine again. The Pansy is properly a biennial, but can be perpetuated by cuttings or divisions of the root.

To produce a bed of choice Pansies, select a north aspect, with a cool bottom. Soil of medium texture, and moderately enriched, should be preferred for the production of large flowers. Keep the soil frequently stirred around them, and be careful that the border is free from wireworm. If the plants are put out in September, they will be established before winter; and I have frequently found that plants so treated, get through the winter quite as well as those coddled in frames. As their propagation is easy, depend exclusively upon young plants for the following season's bloom. Seeds should only be saved from beds of selected flowers possessing the best qualities; for it is only by following this up, that improved kinds to any extent may be obtained; and, as seed is readily produced, it is not worth while saving that from doubtful or indifferent sorts.

THE ASTER.

This large genus of plants embraces more than ninety species, all inhabitants of the United States; some of them very handsome; giving life and beauty to our fields and woods, during the autumnal months, by the profusion of the various shades of their blue, purple, or white flowers. Most of the family are perennials, easily transplanted when in flower, provided they are cut down to the ground, and may be planted among the shrubbery or borders, and will add grace and beauty to the garden.

A number of perennial species are in cultivation as garden flowers, of which the New England Aster and the Michaelmas Daisy, both natives of North America, are perhaps the most common, and, with some of the other species, are prized as among the comparatively few flowers to be seen at that dull season when the autumn is giving place to winter. But the best known and most valued of all the Asters is the China Aster, a summer annual, of which many varieties are in cultivation. It was brought from China to France by a missionary in the 18th century, but has been much improved and varied by culture. The plant delights in a rich free soil. It blossoms from July to the end of autumn and adds much to the liveliness of the flower-garden.

THE CHRYSANTHEMUM.

Long before this genus of plants was known in Europe or America the gardeners of China and Japan were enthusiastic cultivators of it, and it gives its name in the latter country to the highest order of honor, "The Order of the Golden Flower." The colors are exceedingly various and beautiful, and the form of the flowering head in some varieties is marked by the most perfect symmetry, while in others it assumes a medusa-like character.

The Paris Daisy or Marguerites have recently become popular as greenhouse or bedding plants. The circumstance that it may be had in flower during the late autumn months and far into the winter, coupled with its profuse flowering and simple requirements for its culture, renders the Chrysanthemum a universal favorite. There are numerous varieties, sufficient to form an attractive exhibit; in many places the "Chrysanthemum Show" attracts great numbers of spectators.

Cuttings are struck in November, December and January. They require no heat, but merely protection from frost, and till they take root they must be kept in a close case away from draughts. The soil they require is a rich loam, with decomposed manure, a third of the latter to two-thirds of the former. They should be placed out of doors from May till the time of killing autumnal

frost, when they ought to be housed to protect them from freezing.

MIGNONETTE.

This fragrant hardy annual is too well known to need any description. A bed of it should be found in every garden. It continues to bloom and send forth its sweetness all the season, perfuming the whole region about the premises. Self-sown plants begin to produce flowers in June. The plants are in great demand in and about cities, being sold in pots and in bouquets. It is a native of North Africa. The name is French and signifies "Little Darling."

SWEET PEA.

"Peas of all kinds diffuse their odorous powers
Where Nature pencils butterflies on flowers."

Lathyrus odoratus is one of the most beautiful, and also one of the most fragrant, of the species, and is deservedly one of the most popular annuals which enrich the flower-garden. The varieties are, white, rose, scarlet, purple, black, and variegated. Each variety should be sown by itself, in circles about a foot in diameter, three or four feet from any other plant. When the young plants require support, a light, neat stake, or rod, should be stuck into the centre of the circle, to which they should be slightly fastened as they advance in height. Some are in the habit of supporting them with brush, which looks very unsightly before it is covered with the vines.

The Sweet Pea will grow five or six feet high, in rich ground, and continue in bloom from July to October. The seed should be sown as soon as the ground is in order in the spring.

AMARYLLIS.

Amaryllis formosissima, or Jacobean Lily, is a flower of great beauty. It is a tender bulb, but succeeds well when planted in May, in the open border, in a rich, sandy soil. The top of the bulb should hardly be covered with earth. The flowers are large and of a very deep red. The under petals hang down, the upper curl up, and the whole flower stands nodding on one side of the stalk, making a fine appearance. The bulb rarely produces more than two flowers, and more frequently but one, about one foot high, flowering in June or July. Upon the approach of freezing weather, the bulbs must be taken up, dried, and put away in dry sawdust, where they will be secure from frost.

Aulica Stenoplalon is a magnificent species, having large orange crimson flowers, beautifully veined with scarlet. This grand novelty was discovered in 1877 in one of the West India Islands. The flowers are perfectly double, and the color is rich, fiery orange red.

THE WAX PLANT.

This plant is a native of tropical Asia, where it is partially parasitical, its roots penetrating the bark of the trees which support it. It was introduced into England in 1802. There are several species, but only one is generally cultivated. Hoya Carnosa has thick waxy leaves, and bears umbels of beautiful flesh-colored flowers which are very wax-like in appearance. It is an excellent plant for house culture as it stands the extremes of heat and cold better than most plants, and is not easily injured by neglect. It can be trained to climb on trellis-work to almost any height, and when in bloom, which continues for half the year, it is a very interesting plant.

There are several varieties of Hoya, but one only is generally cultivated. *Silver Variegated Foliage* is very handsome, but is of slow growth and difficult to propagate. *Imperialis* is a new variety with beautiful foliage and scarlet flowers. *Cunningham* has

light green leaves, deeper colored flowers than the Carnosa and is a rapid grower.

They succeed best in peat, with some fibrous soil and sand. They must have perfect drainage, and require a period of rest. Hoya Carnosa is easily propagated from cuttings. A very good method is to wrap a cutting in moss, keeping it moist until the roots are well started.

GERANIUMS.

A lady who has been very successful with her flower-garden, and has a rare collection of Geraniums, writes as follows: "As Geraniums are not at all fastidious about soil, I take whatever is available, mix a small quantity of sand with it to make it friable, enriching with old manure. I nearly fill the pot, and then make a hole in the center, set in the plant, press the earth firmly around it, fill to the top and press down again, water, and set the pot in a cool and shady place for several days, then bring to the light for a few hours, gradually accustoming them to the sunshine, until they become fully established in their new quarters. When the weather is sufficiently warm, I plunge the pots in the border for the summer, covering the pots entirely. I choose a cloudy day if possible; if otherwise, I do the work late in the afternoon, so that the intense sunshine may not at first beat upon them. I prefer massing these new plants by themselves, as the effect is more pleasing than when intermixed with other kinds,

"The Geranium bed is the most attractive one of my garden. It is always full of bloom, and the varied hues commingled are very attractive. I remove all decayed leaves and the trusses as soon as the flowers have faded. Frequently there will be a few decayed pips marring the beauty of a fine truss, and these I carefully remove. All of my large stock Geraniums which have been wintered two years, I set by themselves, and they furnish an abundance of flowers for bouquets, and cuttings for new plants. Where one has a plenty of garden room, they need not mind having several choice Geraniums of a kind.

"Slips will root well during the summer months, if set in the earth near the parent stock, where they are shaded from the direct rays of the sun. Care must be had to set the cuttings well down in the soil, and firm the earth compactly around them. In this way one can obtain with little care nice plants for the winter window garden, which will be more shapely than those which have become very branchy. Geraniums are ill-growing plants unless pruned and trained with skill. But they are so easily cultured, adapting themselves to most any situation whether of shade or sunshine, are so hardy, and bloom so freely, that we can but admire them though they yield no fragrant flowers.

"There are many varieties of scented-leaved Geraniums, and these mixed with the odorless blossoms are almost an equivalent Then the beautiful "Golden Bronzed Zoned" Geraniums, and the "Silver Margined" and "Tricolored," are so beautiful in foliage, while *Happy Thought*, with its creamy yellow leaf margined with green; *Distinction*, with deep green leaves zoned with black; *Mrs. Pollock* with bronze red zone belted with bright crimson margined with golden yellow, are exceedingly ornamental. Beside these there are many perhaps equally attractive, not often named in the general collection. *Freak of Nature*, first sent out last year, is an improvement on Happy Thought the center of pure white narrowly margined with light green; flowers light scarlet; habit very dwarf and spreading. It originated with Mr. Gray of England, and was awarded three first-class certificates.

"Of the numerous classes into which Geraniums are divided, few only are given usually by florists. There are the Ornamental Foliage of which we have cited a few examples, and the Golden Tricolors, Silver Tricolors, Golden Bronze, Nosegay and Lilliputian Zonale; double and single Geraniums.

"*New Life* originated with Mr. H. Cannell, of Swanley, England, in our Centennial year, and he sent out the first thousand by subscripton only, at $5 each—not one sold till the thousand were engaged! Now you can purchase it at prices ranging from ten cents to thirty. It is unique in color, being splashed, striped, and flecked with salmon and white on an intense scarlet ground. It is sometimes freakish, having pips with some petals salmon, others partly white and partly scarlet, others pure scarlet. But this very freak is charming, for with beautifully striped trusses there will be others thus sportive. Its habit is dwarf, compact, and its dark leaves zoned with black are very handsome. It cannot be surpassed as a free bloomer.

"Of the Sweet-scented Geraniums, we have none equal to the hybrid, *Mrs. Taylor*, for beauty of foliage and of flower. It is a fine grower, and for green to mix with flowers it is admirable. *Dr. Livingstone*, a more recent novelty, is very handsome and fragrant. Rose and Lemon scented are delicious. *Lady Plymouth* is a variegated rose; leaves bronzy green, fringed with creamy white, sometimes assuming a pink tinge; very ornamental. *London Blue* is a very rare variety of scented Geranium, of heavy creeping growth, with large crimped or curled leaves covered thickly with fine spines or hairs, and seldom blooms."

This practical information will prove valuable to all flower-gardeners.

THE SNOW-DROP.

The Snow-drop is the earliest flower of all the garden tribe, and will even show her head above the snow, as if to prove her rivalry with whiteness. Every third year the roots should be taken up, in June or July, when the leaves are decayed, and kept in a dry place till August, when they should be replanted. The bulbs are very small. To make them look well and to produce a pretty effect when in bloom, about twenty should be planted together in a clump, one and one-half or two inches deep. There is a variety with double flowers; both sorts desirable; about six inches high in March and April.

"The Snow-drop, who, in habit white and plain,
Comes on, the herald of fair Flora's train."

There is a flower called the *Leucojum*, or Great Snow-drop, very similar to this, but twice the size. Of this there are three kinds: the Spring, the Summer, and the Autumnal Snow-drop. The bulbs are much larger; should be planted five inches from each other, four inches deep. "We look upon the Snow-drop as a friend in adversity, sure to appear when most needed."

"Lone flower, hemmed in with snows, and white as they."

THE GLADIOLUS.

Gladiolus communis is a hardy, showy border-flower, of which there are several varieties in cultivation, viz., white, purple, and red. They should be planted in October, on a rich sandy soil, about two and a half inches deep, and require little protection, except the purple variety. They have a flag-like foliage, and produce their flowers on long, one-sided spikes, or racemes, about two feet high, in June and July.

Gladiolus byzanteum is also hardy, and requires the same treatment; flowers purplish-red. The Gladiolus family includes many bril-

liant species and varieties; most of them green-house plants. Many of them, however, succeed well in the open ground, when planted in the border in May; but it is necessary to take them up in October, and keep the roots dry, and from the frost, till the time of planting again. All the species delight in a rich, light, sandy loam, and should not be planted more than one and a half inches under the surface.

Among the choice varieties are Calypso, Cleopatra, Eldorado, James Carter and Lord Byron.

Gandavensis produces long spikes of the most vivid scarlet flowers. It has flowering stems four and five feet high, which throw out a succession of spikes of its rich and brilliant blossoms.

Floribunda is another beautiful species, with a profusion of delicate pink flowers, marked with purple, about two or three feet high, in August. The treatment of all the tender varieties is similar; if they are planted in pots, forwarded in a hot bed, and turned into the open ground in June, they flower somewhat earlier, and grow stronger.

THE HYACINTH.

The Hyacinth is a highly esteemed florist's flower, of easy culture, of which more than one thousand varieties are cultivated in Holland, forming quite an important item in the exports of that country, and whence, Great Britain, the United States, and all Europe, receive their annual supplies, and, in fact, all parts of the world. Hyacinths are double and single; of various colors, embracing every shade of red, from a deep crimson pink down to white; of blue, from white to almost black, and some few yellow and salmon color; but the shades of yellow are not very brilliant, and appear yellow only in contrast with the white.

Some of the white, and other light varieties, have red, blue, purple or yellow eyes, which add much to the beauty of the flower; and others are more or less striped or shaded; and some are tipped with green. The double varieties are generally considered the finest, but many of the single sorts are equally desirable, as what is deficient in size of the bell is made in the greater number of them; some of the single sorts are the richest in color.

Strong bright colors are, in general, preferred to such as are pale; there are, however, many rose-colored, pure white and light blue Hyacinths, in high estimation. Hyacinths begin to flower the last of April in this climate, and if shaded by an awning from hot suns, may be kept in perfection the greater part of a month. They never require watering at any season; keep them free from weeds; as the stems advance in height, they should be supported by having small sticks, or wires, painted green, stuck into the ground back of the bulb, to which they should be neatly tied; otherwise, they are liable to fall down by the weight of the bells, and, as the stem is very brittle, it is sometimes broken off when exposed to storms.

The most suitable time to plant Hyacinths is in October or November. The finer sorts will appear to the best advantage in beds, while the more common varieties may be distributed about the borders where most convenient. The dimensions of the bed should be marked out, and the soil taken entirely away to the depth of two feet; the earth on the bottom should then be dug and well pulverized, and the space above filled with the best garden mould, free from vermin of every description, and largely composed of rich decayed manure.

In California there grows what is called the Twining Hyacinth. It grows in the

mountains and twines about the bushes, sometimes growing eight or ten feet. After it gets to the top of the bush and rests awhile, it lets go of the earth and goes on blooming for months regardless of the burning sun. The flower stem breaks off near the ground, and the flowers are kept swinging in the air, supported only by the bush about which it twines. The color is deep rose and is very pretty.

Purple Hyacinth Bean.—A fine, tender annual climber, growing from eight to fifteen feet in a season, Treatment very much like the common bean. Flowers in clustered spikes. There is a variety with white flowers.

TULIPS.

Tulips ought to have a place in every garden. They make a brilliant show in the spring when the beds are bare of other flowers, and afford bloom for a long time, if a good assortment is selected. The pretty little dwarf Duc Van Thols are early bloomers and are very gay. They are admired also for the house, and by planting in September, will come into flower in December. There are early single and double Tulips, and also late bloomers, so that by having a variety, the border may look gay for a long time. Parrot Tulips are large and very brilliant in color, and picturesque in appearance.

All of these varieties succeed in ordinary garden soil. They ought to be planted in October or November, about four to six inches apart, and about four inches under the surface. Before severe frosts they need to be protected by branches of evergreen, straw or leaves. After blooming, and the leaves have died down, they can be taken up, dried and stored till autumn, if the bed is needed for other flowers.

The bulb catalogues issued by leading florists in the autumn, and sent free to all applicants, will enable you to select just what you want.

CARNATIONS AND PICOTEES.

The Carnation and Picotee differ only in the arrangement of the color, or markings. The distinction is made by florists, and is of course arbitrary. Seeds saved from one plant, may produce both Carnations and Picotee, or even from the same seed-pod. In an old work in our possession, the distinction is as stated, but for long years any flower with an irregular edge has been considered unworthy of propagation. The Carnation should have broad stripes of color running through from the center to the edge of the petals. The Picotee has only a band of color on the edge of each petal.

There are two classes of Carnations, and thousands of varieties. The class of Perpetual Bloomers are called Monthly and Tree Carnations. The Garden Carnations are hardy, and can be left in the garden during winter by giving them a covering of leaves, straw, or evergreen boughs. They are easily raised from seed. Sown in June or July, will make good robust plants before frost, which will bloom the following summer. Some of them will be single, perhaps, and these can be removed.

Those of superior merit may be multiplied by *layering*. This method is to select good healthy shoots that have not bloomed, and make a cut midway between two joints. First cut half way through the shoot, then make a slit lengthwise to a joint. Remove the earth a few inches in depth, and press the branch down so that this slit will open, and then cover with the soil. Roots will form where the cut was made, and thus a new plant will be formed, which can be removed in the autumn or spring. Midsummer is the best time to do this, and by

adopting this method good, healthy plants are secured.

The plants should be well watered a day or two before layering is commenced, and immediately afterward—then only occasionally. They are frequently propagated by cuttings, which can be rooted in wet sand, or in light sandy soil.

Perpetual Bloomers,

Or Monthly Carnations, can be easily obtained of the florists for summer or winter blooming; the former purchased in the spring and the latter in the autumn. If one raises their own stock, it is not best to allow those to bloom much during the summer that are wanted for winter flowering. It is well to sink the pots in a good sunny place in the garden, and when they run up and show signs of bedding, cut back the stalk so that it may become more compact and branchy, then the buds in the late autumn or winter, will be much more numerous.

The best for winter blooming are *La Purite* (carmine), *President de Graw* (white), *Peerless* (white, striped with pink) and *Peter Henderson*, of the well-known varieties. Of those of recent introduction, *Lady Emma* is excellent. *Lord Clyde* has for several years proved to be an excellent winter bloomer. It is of a very robust growth, like its parent the *Edwardsii*, but of a more dwarf, low-flowering habit. The ground-work is white, thickly striped with carmine, and a frequent blotch of maroon; very floriferous, each stem bearing from six to eight flowrets. *Lydia* is another of the recent novelties, and is very handsome. Flowers very large and intensely double, of a rich rosy, orange color blotched and flecked with carmine. *Crimson King* is one of the largest Carnations, very full, bushy habit, and robust, color crimson-scarlet. A pure bright scarlet is rare; when therefore, *Firebrand*, a novelty of 1880, was announced as a bright scarlet, it produced quite a sensation. It is very highly commended by those who have seen it. *Grace Wilder*, *Princess Louise* and *Fred Johnson*, are new hybrid seedlings now offered for the first time to the public.

DIANTHUS.

The word is derived from the Greek words *Dios*, divine, and *Anthos*, a flower, God's flower or flower of Jove. There are several species, and many varieties of Dianthus; *Dianthus Caryophyllus* is what is common known as the Clove Pink, and from it have been produced the double varieties called Carnations and Picotees. The plant in its wild state is found growing on the south side of the Swiss Alps, at a low altitude, where the winters are not severe. The common perennial garden Pink is *Dianthus Flumarias*. The old and well-known Chinese Pink, *Dianthus Chinensis*, is a biennial, flowering the first season from seed sown in spring, lives during the winter, blooms the second year, and then dies.

New and superb varieties have been introduced of late years from Japan, and *Dianthus Laciniatus*, and *Dianthus Heddewigii*, both single and double, make a splendid display, and are among the most desirable of our garden flowers. *Dianthus Diadematus* is of dwarf habit, very profuse in blooming, and the flowers are of various hues, from white to dark maroon, and also beautifully marbled and spotted. Of the recent novelties *Eastern Queen* and *Crimson Belle* are superb. "Eastern Queen" is beautifully marbled; the broad bands of rich mauve upon the paler surface of the petals are very striking. "Crimson Belle," as its name implies, is of a rich crimson hue, with dark markings; very large and finely fringed.

For early blooming it is well to sow seed as early as April. June sowing will secure good hardy plants for the following season. When there is a profusion of bloom, it is well to remove a portion of the flowers, so that the plants may not become exhausted, and the seed pods beyond what are desired for ripening, ought also to be cut off.

DAHLIAS.

The genus Dahlia comprises but few species, all natives of the mountains of Mexico, whose range is from 5000 to 10,000 feet above the level of the sea. About one hundred years ago a Spanish botanist introduced seeds of the Dahlia into his native country, and named the genus in honor of a Swedish botanist, Dahl. The first seed imported seemed to be variable and not very promising. About seventy years since, Humboldt sent fresh seed to Germany. Soon after this, both seeds and bulbs were introduced into England and France, and began to attract considerable attention, some enthusiast being rash enough to hazard the assertion that "there are considerable reasons for thinking that the Dahlia will hereafter be raised with double flowers."

About 1812 probably the first double Dahlia was grown, but for several years after this both double and single varieties were figured in colored plates, and exhibited at horticultural shows. That the single varities were prized is not strange, for the double were not very good, and even as late as 1818, published figures showed very imperfect flowers.

The improvement of the Dahlia after this was rapid, and its popularity quite kept pace with its improvement. Dahlia exhibitions were held in England and on the continent, which were crowded by enthusiastic admirers of this wonderful Mexican flower. For many years the Dahlia maintained its popularity, but there is a fashion in flowers, as in almost everything, and for a time the Dahlia became, to a certain extent, unfashionable, and this was well; for it placed the flower upon merit alone, and growers were compelled to introduce new and superior varieties to command either attention or sale for their favorite flower.

A taste for old styles is now the "correct thing," and so we have imitations of ancient earthenware, furniture, etc., and import *original* Chinese Aster seed, and also obtain roots of the single Dahlia from Mexico.

There are three pretty distinct classes, the *Show* Dahlias, the *Dwarf* or Bedding, and the *Pompon* or Bouquet, and to this we may add the *Fancy* Dahlia. The *Show Dahlia* grows from three to four feet in height, and embraces all our finest sorts, fit for exhibition at horticultural shows, from which the name is derived; the flowers range in size from two and a half to five inches in diameter. The striped, and mottled and spotted varieties belonging to the Show section are called *Fancy*, and though not as rich, nor usually as highly prized as the selfs, or those of one color, are very attractive. The *Dwarf* or *Bedding Dahlia* grows about eighteen inches in height, and makes a thick, compact bush, and covers a good deal of surface; flowers of the size of Show Dahlias. They are therefore very desirable for bedding and massing.

The *Pompon* or *Bouquet Dahlia* makes a pretty, compact plant, about three feet in height. The leaves are small, and the flowers from one to two inches in diameter. Many expect to find small flowers on their Dwarf Dahlias, and feel disappointed because they are of the ordinary size, not knowing that it is the plant, and not the flower, that is dwarfed, and that only the Pompon gives the small flower. The word *Pompon* is

French for topknot or trinket, meaning about the same as the English word cockade. The English term *Bouquet* is very appropriate, as the flowers are so small they are very suitable for bouquets. Being of a spreading habit, they cover a good deal of ground. Unlike most of our bedding out plants, they do best in poor soil; if rich, they grow to branches and leaves so much, they bloom sparingly and late.

Generally those who plant Dahlias purchase the tuberous roots, because they give good strong plants, that flower freely without trouble or risk. They are smaller and better than the large, coarse roots usually grown, because they are raised from cuttings, and generally form their roots in pots. When a tuber is planted, a number of buds that cluster around its top will push and form shoots, and if too numerous, a portion should be removed; indeed, one good, strong plant will suffice, and then the plant will become a tree instead of a bush. Even then, if the top become too thick, a little thinning of the branches will be of advantage.

If the young shoots that start from the neck of the bulb, are cut off near a joint and placed in a hot-bed in sandy soil, they will root, form good plants, and flower quite as well as plants grown from the tuber; this, however, requires some care and experience, and amateurs generally will succeed best with bulbs.

New varieties of Dahlias, of course, are from seed. Some of them prove good, others fair, and a portion utterly worthless. As a general rule, we would not advise amateurs to trouble with seeds, although there is pleasure in watching the birth and development of a new and beautiful variety.

The seed of Dahlias may be sown in pots in early spring or end of winter, in a light, loamy soil; they will germinate quickly, and as soon as they begin to show their second leaves they should be pricked out into other pots or boxes, so that they may have plenty of room and air—they are very liable to damp off if at all crowded. After pricking out they should be kept in a thrifty, growing condition, by proper attention to watering and temperature; the temperature should be maintained as near 70° as possible, and the watering be sufficient to preserve a moderate moisture.

If the green fly attack them, it will be best to treat them to a very weak dilution of tobacco water; the young succulent plants are very sensitive to smoke, and it is best not to fumigate them. In about two months the young plants should be large enough to pot off singly, or to be transplanted into a frame or bed, where protection can be given them from the cold of night-time, or from late frosts. As soon as all danger is past they can be transplanted into their summer quarters, and should stand at least three feet apart. The soil where they are to grow should be rich and mellow. In August they will come into flower, and those having blooms worthy of cultivation can be retained, and the others destroyed. Only a small proportion of the plants grown from common seed produce flowers equal to those now in cultivation, but when seed is saved from a choice collection of named varieties, the chances are that a large proportion of the plants will produce very good flowers.

The Dahlia is called *gross feeder*, but it is not. It loves moisture rather than rich elementary food. In clay it finds the best constituents of its development—moisture, silex, lime and alumnia. So we say to those who love this queenly flower, if you would see the queen in all her glory, plant in a comparative heavy soil, no manure, and reduce the stalks

to one for each tuber, set the stakes firmly, to keep the stalks from swaying, and if the season is dry, give the bulbs a *soaking* with water every evening during the drought. My word for it you will then be proud of your success.

The Pompon, or Bouquet Dahlia is a favorite variety of this genus. The little round balls of bloom are so pretty and trim. *Beatrice*, blush tinted with violet; *Dr. Stein*, deep maroon, striped and mottled; *Gold-finder*, golden yellow; *Little Philip*, creamy-buff edged with lilac; *Little Valentine*, crimson; *Mein Streifling*, salmon, stripped with crimson; *Pearl*, white; *Prima Donna*, white, fimbriated; *Perfection*, deep maroon.

Single Dahlias.

Anything for a change from the common order of things, seems to be the fashion now-a-days, in flowers as well as in house building and house furnishing. The antique, the antique, is the rage! So after years of labor and hybridization to bring the Dahlia up from its native state of single blessedness, to its enormous cauliflower blooms, there comes a reaction and now single Dahlias are praised as "the most beautiful of all flowers," "the *par excellence*, the Londoner's flower!" Well, let the English florists thus praise its beauty if they want to, but we opine that on this side of the great ocean it will never be considered "the most beautiful of all flowers," however attractive some of them may be, and well adapted for bouquets. There is no danger of their superceding the doubles, but it is well to have both when one can afford it; their present high price puts them beyond the reach of those whose purses are not well filled, but in a year or two, when the novelty is worn off, they can be purchased at half or even less, perhaps than their present price.

We find in the London *Garden* the following: "Dahlia perfecta, originally introduced by Messrs. Henderson, is perhaps the finest flower which we possess, unless Paragon, brought into notice by H. Cannell, may be considered to bear away the palm. Lutea, a quilled yellow, is also a grand bouquet flower."

The single Dahlias, Paragon and Lutea, are now offered for the first time in this country. Color very dark velvety maroon with shadings of bright scarlet around each petal; small yellow disk. Lutea is pure yellow, with dark orange center. The grandest novelty lately is the Dahlia Juarezii, and not only a novelty, but a most valuable and useful decorative plant for all purposes through the late summer and autumn months. Its blossoms are of a rich crimson, and very much resemble in shape and color the well-known Cactus, Cereus *speciosissimus*. Height about three feet, very bushy flowers of very striking appearance and quite unlike those of an ordinary double Dahlia, the flowerets being flat and not cupped.

CAMELLIA JAPONICA.

This is a very popular genus on account of their rich dark-green leaves, and beautiful rose-like flowers. They are hardy greenhouse plants, and thrive best in light loam mixed with sand and peat, but will do well in light soil without the peat. It will not flourish in a limestone soil.

The Camellia Japonica was sent to England in 1739 by Father Kamel, a missionary, for whom it was named. As a house-plant the Camellia requires considerable care, on acccount of the tendency of flower buds to drop off. A northern exposure is best, and a temperature of from forty to fifty degrees. When the buds are swelling, water plentifully with warm water, but allow none to stand in the saucer. Sponge the leaves once a week. In the spring put the plant

out in a shady place on the north side of a house or fence, not under the drip of trees, and water it every day. Set the pots on a hard bottom, so that no worms can get into them. They form their flower beds during the summer, and at this time a good growth of wood must be encouraged.

In the Southern States the Camellia can be raised with not more than ordinary care; at the North it must be considered entirely a green-house plant, and as such will always be highly prized. We are often asked how it should be cared for as a house-plant, and to all such, in the northern part of the country, where it is necessary to maintain good fires in warm houses for several months of the year, we have no hesitation in saying, let it alone, do not expend care and labor where there is so little prospect of reward.

Camellias are of many hues, and some are beautifully striped. *Gen. Lafayette*, bright rose, striped with white, imbricated. *Bell Romann*, imbricated, large flower and petals, rose striated with bright crimson. *Matteo Molfino*, petals cerise, with pure white band down center. *Mrs. Lurmann*, crimson, spotted, very beautiful. Pure colors of white, red, crimson, rose and carmine, can be obtained.

AZALEA.

Shrubby green house-plants of easy cultivation. Very showy and hardy. Like the Camelia, they are found in all the leading colors, and also striped, blotched and spotted. They are both single and double.

Alexander II, is white, striped with vermilion; edges of petals fringed. *Aurelia*, white, striped with rosy orange, amaranth spots. *Flag of Truce*, is a pure double white, very fine. *Her Majesty*, is rosy-lilac, edged with white. *Alice*, rose, blotched with vermilion; double.

Azaleas need a light soil of sandy loam, to which should be added one-half leaf mold. Repotting should be done in May, trimming the tops to bring them into shape. Then plunge in some sheltered spot in the garden. In September the plants should be brought in under cover or into a cool room. They do best when the temperature ranges from forty degrees at night to sixty-five or seventy by day. The foliage should be showered once a week, but care must be taken that the roots are not over-watered, as they rot easily. Small plants bloom well, but their beauty increases as they get age and size. The flowers appear on terminal shoots, and are from one inch to two and a half inches in diameter.

Azaleas if left to themselves will develop long shoots, that after a time become naked below and are furnished with leaves only at their extremities. Flower stems are formed on the new wood of each summer's growth, consequently the amount of bloom, other things being equal, depends upon the amount of new wood annually produced. In order to have plants of good shape when they become large, it is necessary to give attention to pinching and training them from the first. The pyramid form, or more properly that of a cone, and rounded at the top, is considered the best for the plant, as it allows the greatest exposure of leaf-surface. Two principal methods are adopted to regulate the growth and bring plants into shape; one is by successive pinchings as the growth proceeds, the other by allowing long shoots to grow and then bending and training them down, thus causing many of the dormant buds along their whole length to break and develop into shoots. A skillful combination of the two methods is probably better than either exclusively. In this way, the life of the plant is not injured, and its productive power is increased.

THE ROSE.

This well-known and highly esteemed family of plants, or shrubs, embraces many distinct species, which, by the skill of the florist, have multiplied into thousands of varieties,. They vary in height from one to twelve or fifteen feet, producing flowers, single, semi-double and double, and generally of exquisite fragrance. The colors are, pure white, white-tinted, shaded, striped, or mottled; every shade of red to purple, and all these shades and colors variously mixed; also a few yellow varieties. There are no black roses, although we sometimes hear of them. Such as are sold for black roses are those of dark shades of purple or crimson.

The foliage is also various in the different species of varieties, but of a general character. They are different also in the appendages to the plant, some having formidable thorns, while others are entirely destitute. Some flower only once in the season—others are perpetual, or everblooming. Most are hardy, but many require protection. It is a flower beloved by every one, not only in the present age, but has been in all ages past, and will no doubt continue to be the most prominent and desirable flower as long as the world stands. It may, with propriety, be styled the *Queen of flowers.*

The Rose is pre-eminently the flower of love and poetry, the very perfection of floral realities. Imagination may have flattered herself that her power could form a more perfect beauty; but, it is said, she never yet discovered such to mortal eyes. This, however, she would persuade us to be a mere matter of delicacy, and that she had the authority of Apollo for her secret success:

——'No mortal eye can reach the flowers,
and 'tis right just, for well Apollo knows
'T would make the poet quarrel with the Rose.'

It is, however, determined, that until the claim of such veiled beauty, or beauties, shall rest upon better foundation, the Rose shall still be considered as the unrivalled Queen of flowers.

It is said, however, that the angels possess a more beautiful kind of Rose than those we have on earth. David saw in a vision a number of angels pass by with gilded baskets in their hands.

"Some as they went, the blue-eyed Violets strew.
Some spotless Lilies in loose order threw;
Some did the way with full-blown Roses spread,
Their smell divine, and color strangely red;
Not such as our dull gardens proudly wear,
Whom weathers taint, and winds' rude kisses tear;
Such, I believe, was the first Rose's hue,
Which at God's word in beauteous Eden grew;
Queen of the flowers that made that orchard gay,
The morning blushes of the spring's new day."

COWLEY.

The Moss Rose, or Moss Provence Rose, is well known as an elegant plant. The flowers are deeply colored, and the rich mossiness which surrounds them gives them a luxuriant appearance not easily described; but it is familiar to every one. It is a fragrant flower; its country is not known to us, and we know it only as a double flower.

The origin of its mossy vest has been explained to us by a German writer:

'The angel of the flowers one day
Beneath a Rose-tree sleeping lay;
That spirit, to whose charge is given
To bathe young buds in dews from heaven;
Awaking from his light repose
The angel whispered to the Mose;
'O fondest object of my care,
Still fairest found where all are fair,
For the sweet shade thou'st given to me,
Ask what thou wilt, 't is granted thee.'
'Then,' said the Rose, with deepened glow,
'On me another grace bestow.'
The spirit paused in silent thought;
What grace was there that flower had not?
'Twas but a moment;—o'er the Rose
A veil of moss the angel throws,
And, robed in nature's simplest weed,
Could there a flower that Rose exceed?"

Care of Birds and Other Pets

THE CANARY.

THIS sweet singer is entitled to the first place in any and all places, whether book, cage or aviary, his song being a pleasure to the poor and rich alike, and he can be found in the hut of the poor and the mansion of the rich singing as sweetly for one as the other. Space will not permit of description or account of the origin of the Canary, as it is now a domesticated bird, as far as we are concerned. The largest number of the store-birds are brought from Germany to this country every year, the preference being given to them over our native birds on account of their excellence of song, and the St. Andresburg and other warblers are certainly entitled to it, as they are the sweetest singing birds in the world.

A good St. Andresburg warbler, with its sweet water notes, is preferable to any mocking-bird or nightingale for excellence of its music (leaving care and trouble out of the question) and why are our native birds inferior? The reason is we are a careless people about the beautiful in art and nature. When you go to buy a new hat you want a pretty one, and will pay an extra price to get it. If you want a musical instrument you will take a friend with you to choose it, when you do not know anything about it yourself, but when you go to purchase a picture you will go alone, look at the price, and get a cheap one, and consequently a daub.

When you think of raising young birds you will run to the cheapest place, or from some acquaintance get a scrub hen for a gift, go to as much trouble to raise scrub birds as would be required to raise good stock, with a very small extra outlay in the first start. The scrubs you cannot give away, whereas there is a constant market at good prices for good birds.

There are so many kinds of Canaries now in existence, or rather varieties of the same family, that it is impossible to enter into a description of them. But when buying a bird see that he is of good form, clean of limb, and, above all, never buy a bird till you have heard him sing, and are satisfied with the quality of his song. Then do not grudge the price for a good bird. When made a pet of it is priceless.

Mating.

The best time to mate birds is in the winter, and the 14th of February or St. Valentine's Day is by many considered a very lucky day to place the birds in the same cage. Let the luck be as it may, the month of February in this country, with our houses heated as they are now, modernly, is certainly the best time to place the birds together. After the birds are placed in the cage together they usually fight for a day or two, and sometimes longer, before they mate. As soon as they show any sign of mating, by carrying paper or anything else they can find, and appear to be looking for a place to

put it, a nest made of woven wire and lined with cloth should be secured inside the cage, and the birds left to themselves as much as possible, as they will manage their own affairs much better than if meddled with. All breeding cages should be made so that the bottom can be removed for cleaning without disturbing the birds, eggs, or young

In eight days from the time the birds mate the female will usually lay her first egg, and generally one each day thereafter for three or four days, and in thirteen days from the time the first egg was laid, the first bird should make its appearance in the nest, and one each day thereafter until all are out. In three weeks the young birds are able to take care of themselves, and the old ones return to the labor of getting ready to raise another brood, as they usually raise four broods in a season; but do not be disappointed if you do not raise more than one bird from every four eggs that are laid.

The Color.

In mating birds the color of the offspring desired may be of first importance to some, and how to produce it from a cross of different colors will be a source of pleasure to many, therefore a few of the principal crosses will be given. although it is easy to get the form and color of the birds that you would desire at any well-stocked bird-store in the months of February and March, choosing therefrom a male and female of exactly the same shade or marked alike.

But as some desire to try and get something new, or that never was seen before, as though there was anything new under the sun, we will give them a chance to try what they can do.

If you desire to get pied birds, which are generally strong, hearty birds, get a rich, yellow-splashed male, and mate it with a yellow hen; if it is desired to get cinnamon-colored birds, a dark-green male bird and a very light or white hen will often produce them; and a very light cinnamon bird mated with a green one will very often produce a dove or fawn-colored variety, which are very handsome birds. Most authorities agree that the mating of topknot birds will produce bare poles, but by many this is contradicted, who have raised beautiful crested birds from a male and female, having only moderately good topknots.

A great improvement can be made in the form of the bird most often met with, and known as the German bird, by crossing it with the part Belgin or long-breed variety; and when the male bird is a good songster the offspring will be the same, if not better songsters thant heir parent bird. The Belgin variety is usually not an extra good songster, and it is a delicate species in this climate.

As soon as the young birds leave their nest they should be removed from the cage and the cage thoroughly cleaned, and the nest removed to keep the vermin, with which it will be infested, from annoying the birds: and when your cage is dry and fresh seed and water in it, return the birds, and they will get the most comfortable night's rest they ever had in their young lives.

The proper seed for young birds is crushed hemp, canary millet and rape. In addition give crackers steeped in milk and hard boiled egg. Cuttle-fish hung in the cage and gravel spread on the bottom of the cage are really necessary, and the least care and attention that is paid to them otherwise the better they will get along. The best place to raise birds is in a quiet room. After they are raised they ought to be removed to where they will have a first-class singing bird for an instructor, and by this means and treatment our

American birds will get a reputation such as the German birds never had, and that is saying a good deal.

Food.

The best food for Canaries is rape, millet and canary seed, and occasionally a little lettuce and maw seed. Any sweet vegetable is good for them, but sweetcakes and sugar should not be given. A good mixture to keep your birds in song and health is made as follows: One pound sweet crackers pulverized, three hard boiled eggs, and one-half ounce of Cayenne pepper (which should be bought at a responsible drug-store to make sure that it is not mixed with red lead, which is a deadly poison); take the shell off the eggs, rub them and the pepper into the pulverized crackers with your hands until thoroughly incorporated, spread it on a board and place it in a dry place (not in the sun) until perfectly dry, when it can be put away for use; it will keep indefinitely, and will save the time and trouble of boiling eggs every day.

Give a teaspoonful a day to each bird, in a small dish, in addition to the other food. Never buy package seed, for it is apt to be musty and a large portion of millet seed of the poorest quality mixed in it, and will be very apt to injure the health of your bird. If possible buy your seed from a bird store and get the same as they use for their own birds, even if you have to pay a higher price for it. In addition to this feed a small piece of lean beef scraped fine, once a week, will be found beneficial to your bird. Always hang cuttle-fish in the cage.

The Mule Bird.

These are generally procured by crossing a male bird of the other species with a hen Canary, and lovely birds are often produced by crossing the European goldfinch, the siskin, the linnet, the bullfinch, the indigo bunting, the nonpariel and bobolink with a well-formed and very tame hen Canary, the treatment being in every respect the same as the Canaries.

THE MOCKING BIRD.

Next to the Canary comes this lovely songster in general favor, and a cute, cunning lovely pet he is, knowing his friends and recognizes them as quick as a dog would, greeting them with a shrill whistle and a spring from his perch as much as to say, "Dear master, what have you got for me now?" Don't delay, but give him the worm, spider or grasshopper, see him jump to his perch and sing with it in his beak, as much as possible to make you understand how grateful he feels to you for the favor, after which he will get down to the bottom of the cage and eat it, but before doing so making sure that it is dead; then up to his perch he bounds, and the yell of a dog that is hurt could not be shriller than the scream that he will give, changing into the song of the robin, canary, sparrow.

All at once he stops. Then you will hear a hen cackling, a rooster crowing. a cat mewing, or a pig squealing; then there is a silence; he is pluming his feathers, the excitement is all over, for a half hour he will work away industriously, or until every feather is in place, when he will commence to sing some notes very loud and sometimes very low, varying his prelude before the opera commences; then off he starts, being a whole concert in himself, and for hours he will sing without intermission.

When you make up your mind to have a Mocking Bird go to some responsible bird dealer and get him to choose a good young male bird, which he can do by the markings of the plumage and by the formation of the

body of the bird, and whether it will make a good song bird. As the Mocking Bird takes three years to come into full song it is of no second importance that you should get a good one. The best time to buy is in November, for then the bird will be through its first moulting, which is most dangerous to all young birds, and more particularly to Mocking and soft-feed birds in this climate. Before you get your bird get a large cage and have it in readiness for him, and let it be such a cage as you will desire to keep him in for years, for of all birds the Mocking Bird dislikes to have any change made in his habitation, and especially his cage.

Food for the Mocking Birds.

It must be sweet, for if at all sour it will give him the diarrhœa, which proves fatal with a great many birds. Never buy mixed Mocking Bird food. If you have not got time to mix your bird's food, which should be done every morning, sell the bird, or to kill him instantly would be more charitable than to give him what will cause a lingering death. Buy pure Mocking Bird food at a bird store, and every morning mix enough with about an equal quantity of finely-grated raw carrot, or boiled potato mashed very fine and thoroughly mixed, and it is best to vary it, giving the bird the potato mixture one day and the carrot the next; and every other day it will be well to give or mix into the food, along with the potato or carrot, a part of a hard-boiled egg; a pepper-pod should be hung in the cage, and a few insects or meal worms given every day.

Gravel and water are essential to all birds, and should be given to this one. By proper attention to the above rules a Mocking Bird can be kept in song for eight or ten years in a cage, although they have been known to live twenty years. After nine or ten they do not sing and are of little value, as they become more liable to disease year by year.

THE RED BIRD

comes next to the mocking bird in general favor, this being one of our most beautiful birds, and selling at a moderate price, so easily kept in confinement. Such a loud and almost constant songster well deserves to be a general favorite. Who can help but love to see the beautiful red fellow showing his coat of smooth cardinal feathers, red bill and jet black whiskers, and his lovely crest that he can erect or depress at pleasure, forming a foolscap on the top of his head, and he is really one of our hardiest birds, if properly fed, being liable to fewer ailments than most other birds.

The proper food being a mixture of wild rice or pada, wheat, canary, oats, sunflower, and a very little hemp, crackers steeped in milk, with a little red pepper in it, and a couple of meal worms, and other insects every day, a small quantity of raw, lean meat scraped fine, the core of sweet apple once or twice a week; a little cuttle fish should always hang in the cage, also a red pepper pod, gravel and water, which you must give to all birds clean and fresh. When so treated he will live and sing for seven or eighth years in confinement, a pleasure and delight to all who see and hear him.

THE BOBOLINK.

Next in general favor comes the Bobolink, on account of his merry jingle of a song, and which is the merriest song of all birds, and the low price that he can be bought at in the Spring of the year. A person owning a Bobolink really has two birds in the year in appearance. In summer he is gaudy, black, yellow and white; in winter he changes to brown, yellow and black streaks, and resembles the female, which always retains this

sombre colored plumage. He likes to appear in a new dress.

When properly treated this bird will sing ten months out of twelve, his song being much like the canary's, but much louder. His proper food is millet and canary, and to keep him in health and song he requires insects the same as the red birds. When moulting he should be given in addition to above some hemp seed, but not at other times, as it is too fattening, and as he is inclined to be somewhat of a glutton, and gets very fat and too lazy to sing. When so treated he will live in the cage and sing five to eight years.

THE AMERICAN GOLDFINCH.

This bird has a great many names, such as the wild canary, Canadian yellow bird, mustard bird, hanging bird, Yankee whangdoodle, etc. It is admired and loved by all, its body being covered with a coat of rich lemon-colored feathers, excepting the top of the head, wings and tail, which are jet black splashed with white, its bill and feet pink, giving the little fellow an elegant appearance, their song being a lovely jingling warble, and very similar to its European cousin, and in the cage it sings with great animation. They become very tame, but do not generally live long in confinement. They have been known to mate with the female canary, but their offspring is very delicate, and almost, if not impossible to raise.

Food, a mixture of lettuce, canary, rape, and maw seeds, thistle seed and ripe plantain when it can be had; red pepper, green lettuce and grass they are fond of.

THE BLUE JAY.

Another beautiful bird, and no one can help but admire the beautiful Jay as he welcomes you to his cage, with his crest erect. He may be taught to whistle tunes almost perfect when taken young, and trained to do many amusing things at command; but if allowed to run at large he is apt to be mischevious like all the rest of the crow family. He is a hardy bird and will live many years in confinement if fed on bread and milk, oats, a little raw meat cut fine, and part of a raw egg; once in a while a little sweetmeats will be a great treat for him if not given too often. Give him plenty of water to bathe in, and plenty of gravel to pick, and any kind of fruit or insects will be appreciated. His cage must be large to save his plumage.

THE ROBIN

is also quite a pet; a very strong, hardy bird, with a coarse yet rather pleasant song when wild. If taken young the male may be taught to whistle very sweetly. Being easily kept he is quite a favorite among some people, there being a strange superstition among others that it is unlucky for a Robin to be kept in a house, and when such nonsense gets into the head of a human being there is no way to get it out unless you split the head open with an ax, and then you will find the ghost. Treat the Robin the same as mocking birds.

THE CAT BIRD

is really the rival of the mocking bird, but if anything harder to raise, and not many of them make good songsters in the cage; but when you get a good one, that has been raised from the nest, you have a lovely pet. They require the same treatment as the mocking bird and the same food.

THE BROWN THRUSH.

Another very fine strong bird, but not by any means a constant singer, singing principally in April, May and June. Treatment the same as the mocking bird; food the same.

THE NONPARIEL.

Who can help but admire this beautiful plumaged bird, called by some the Mexican canary, and by the English the painted bunting, and they cannot be blamed for giving it that nickname, for it certainly looks more like the work of an artist who was fond of high colors than the work of nature. For its great beauty alone it should be kept by all bird fanciers, and then its song is very sweet, and it becomes very tame. This bird should be fed on canary, millet and rape, and in addition given a few insects such as meal worms, etc., also fruits and a little green food. When so treated it will live for about eight years in confinement.

THE INDIGO BIRD.

This is another handsome blue bird, very hardy and a loud, good singer. No one ever regrets buying this bird. His food should be canary, rape and millet seed, and in addition a few insects, which they are very fond of.

THE LINNET.

This is a very thrifty, hardy bird, a good songster, and readily mates with the canary, producing a very beautiful songster. The seed given to it should be canary, millet and rape. Gravel and water should be given to all birds, including this one.

ENGLISH TRUSH

is a very fine songster in its natural home, but in this country there is not one in four that make good singing birds. If you have one treat it the same as the mocking bird.

ENGLISH BLACK BIRD.

Now you come to a European bird that is hardy and handsome, as well as a splendid songster, his plumage being a beautiful shining black, and his bill a bright orange or gold color. Feed and treat him the same as the mocking bird.

EUROPEAN STARLING.

This is a very fine bird, and one of the handsomest of the European birds, being a beautiful black, speckled all over the body feathers with a yellowish white. See him in the sun and he will certainly attract anyone's attention. His song is very sweet, and he is a constant singer, summer and winter, and can be trained to sing and whistle tunes, and perform other amusing tricks easier than most of other birds. His treatment should be the same as other soft-feed birds, but he is a hardy fellow and does well on bread and milk, varied alternately with mocking-bird food, sand and gravel to eat and roll in, and plenty of water to bathe in, being essential to health. When so treated he usually lives ten years in confinement.

THE NIGHTINGALE.

This is considered by many Europeans to excel our mocking bird; and Wilson, a Scotchman, in his ornithology of North American birds, concedes the superiority of our mocking bird, and even goes so far as to bring into his work a quotation from Shakespeare, "That if the Nightingale sang by day its song would not be considered superior to the cackle of a goose." But the Nightingale is a superb songster, and if he could be with any certainty kept in his cage in this country for any length of time he would be a very valuable bird for us as an instructor of the canary, as he does not get the discordant yells into his song as our Mocking bird is apt to do; but not one in ten can be kept for a year in a cage, but they usually do well in an aviary or large room, where there can be some small trees. They should be fed and treated the same as the Mocking bird.

THE SISKIN,

or black-headed thistle finch of Europe, is not a very handsome bird, but a good one.

The prevailing color of its plumage is a yellowish-green, very elegantly shaded with black; a neat little bird and usually very hardy, and can be mated with the Canary female. Rape, canary, hemp and maw seeds, thistle seed, when it can be had, and a little cracker soaked in milk it generally becomes very fond of. Gravel and water must be given to keep health. He is fond of bathing and should have plenty of water for that purpose, except when moulting.

THE CHAFFINCH.

This is a greatly admired songster, and it well deserves to be, for it is one of the most elegantly formed and handsomest of birds; a very fair songster naturally and an apt scholar, and sometimes can be induced to mate with the female Canary, producing a lovely-formed bird of good plumage and an excellent songster. Canary, rape and millet seeds are the proper food for these birds.

THE BULLFINCH.

This is a badly-formed bird, putting one in mind of a thoroughbred alderman, with a big paunch, its body being too thick for its length, and to make it look still worse its tail is not long. It can be readily taught to perform many tricks, which are very amusing. Its natural song is not good, and when trained the price is so high that it puts them almost out of the market, when it is considered that they are not hardy birds in this climate. Seeds should be rape, canary and millet, and a piece of dry cracker and hard-boiled egg ground together they are very fond of. They can be induced sometimes to mate with a female Canary.

THE GREEN LINNET.

This beautiful little bird is a great favorite with those that desire to cross-breed birds, and when this bird is mated with the Canary, which can readily be done, they produce the very finest of singing birds, and are sold as Green Canaries, their song being louder than the Canary of purer blood, and, in addition, they are hardier. They require the same seed and treatment as the Canary.

THE SKYLARK

is a great favorite amongst Europeans, as it deserves to be, but in this country, where many birds are kept, it is generally given the cold shoulder. It does well in the aviary, and it will sing in a lark cage or special cage made for it, but will not sing in an ordinary cage, and will not live long in any kind of a cage. Crackers and milk, also maw and rape seeds, meal worms and ant eggs, are the proper food. Gravel and water and a piece of green sod they must have in their cage all the time.

THE JAVA SPARROW.

A most beautiful bird, comes to us from the Island of Java. It is almost impossible to tell whether the coat of feathers, which are heavy, are skin or feathers, by the naked eye, they are so smooth and close on the bird's body; a true object of beauty, but not generally good songsters. There are two varieties of them brought to this country—the gray and the white, the white being a scarce bird and much higher-priced. These birds being quarrelsome it is difficult to get them mated with a Canary, but when accomplished it will pay you for the trouble, the young being hardy, easily raised, very handsome, and excellent songsters. Canary, millet and oats should be the general food. Gravel and water they must have, as they are very quarrelsome little fellows. If two males are put into one cage they will fight like the Kilkenny cats, or until there is nothing left but their tails. This shows that male creatures should never be without refining female society.

THE JAPANESE ROBIN.

This lovely bird is now coming into general favor, as well he should, for his elegant form and beautiful plumage, which is of many distinct colors. As his name implies he comes to us from Japan. He is a very good songster, and might be called a mocker of birds. Hearing another bird sing he will listen, and apparently record the tune and notes, and, to your suprise, in a day or two he will come out with his new song almost as perfect as the bird he is imitating. He should be fed and treated the same as the mocking bird, and when so treated he will live many years, and sing nine or ten months in the year.

THE TROOPIAL.

This very beautiful bird comes to us from South America, where it is tolerably plentiful, but on account of its great beauty, hearty constitution, and excellence of song, he is such a favorite where known that the market is large for him, and the price, consequently, high. A more lovely pet cannot be gotten from a naturalist than this one. Food and general treatment the same as the mocking bird.

THE PARROTS.

Now we come to a family of birds which is large and beautiful, with but very few exceptions, and a number of them have the power of learning to talk. As a general thing, however, the most beautiful of them are not what can be called talkers, and in a work of this kind it will be an impossibility to give a description of many of them.

The Gray Parrot.

This kind comes to us from Africa, and is an ashen-gray color, with the end of the tail red and a black beak, and is one of the best talkers and will whistle like a good fellow, and may be considered one of the best-natured of the Polly family, but in this country he is usually not a hardy bird, especially for the first year or or two.

The Double Yellow-Head.

This is a South American bird and an equal in every respect to the gray parrot above described, and much hardier in this climate, and if one wing is clipped and the bird allowed to run around the house, placing a perch on a stand, which the bird will get onto whenever it is going to drop, keeping it in a clean and healthy condition, and never soiling the carpet or anything else.

Cuban Parrot.

This is the general favorite on account of its aptness in learning almost anything it hears and the low price at which it sells. It readily learns to sing, whistle, and say a great many words and sentences, and performs a great many amusing tricks, such as hanging by one and then by two feet, and then by the bill alone to a perch, turning over and over on the perch, flapping his wings, at the same time yelling like a Comanche Indian.

One three years old owned by the writer will talk and act as follows: Keep your weather-eye open, he, hi, ho; your other eye to the wind and Cuty will get hurt; up, up, oh, 'tis so nice; Nellie, oh, 'tis so nice; hurrah, oh hurrah, boys; rats, rats, shut up, what you doing; kiss Nellie; stick a feather in your nose; oh, it hurts; which it learned from having the caked food removed from its nostrils by the use of the stem end of a feather; and to the dog: Oh, Prince, kiss Nellie, kiss Nellie; for all that is good, kiss Nellie. He will run after a cat or bird, yelling ketch the catee, or ketch the doggee, at every few steps; will sing when told to do so, and when done singing will say that is the way to do it, and laugh like a lady at

the very idea of singing and talking, and it is as much opposed to profanity as a sincere church deacon.

When it hears an oath or profane expression it will say, "Ah, ah," and walk backwards as quick as it can to get away. And I am sorry to say that many of our professing Christian brethren would be put to shame by the true Christian spirit shown by the beautiful bird called a Parrot when properly trained.

The Blue Front Amazon.

This is a very fine bird, and will make a good pet, but not much of a talker in the English or German language, but in Spanish it will excel most other birds, both in singing and talking.

The Red Front Parrot

is a South American bird, very hardy, and a very good cheap bird and amusing pet.

The Shell Parakeet.

This beautiful bird comes to us from Australia, and are often called love birds, their habits resembling the true love bird so much in the affection they show for each other. That and their beautiful plumage and form of the bird makes it a great favorite.

Their food should be rape and canary, and in addition some fruit, a little maw seed once a week; gravel and water the same as all other birds must be given to them. There are a great variety of Parakeets, and all should be treated the same way. A few of them can be taught to say words, but none of them make good talkers.

The Loreys

are the handsomest of the Parrot family, but few of them talk, and none excel in talking. Treat them the same as the Parakeets. They will whistle and sing and perform all kinds of amusing tricks, and have often been taught to waltz to music of the violin and piano. They are tolerably hardy, and if kept in health will live long in confinement.

The Cockatoos

are a very handsome branch of the Parrot family, and all are very handsomely crested birds, but not good talkers, but very apt at learning other things, and become very tame and playful, it being very amusing to watch them playing with a stick, taking it in their bills and reaching with onefoot for it, then rolling over on their back, and screaming, while they toss the stick about in their claws. If you have one of these beautiful birds feed it on canary, hemp and sunflower, and wild rice. The seed should be placed where the bird can always get it, but crackers and coffee, or tea with sugar and milk in it ought to be given; plenty of gravel and water and some fruit is about all that is required to keep your bird in health.

The Macaws

are very long and beautiful birds, but should not be kept in a cage, as they are apt to get their beautiful long tail soiled, which mars the splendid appearance of the bird. The aviary is the proper place for this bird, in which his lovely plumage is shown to advantage. When taken young they can be taught to speak well, but when old they rarely accomplish much in talking.

Their food should be wild rice, oats, corn, crackers, and plenty of fruit, such as mellow apples, bananas, pairs, etc., which they are very fond of, and is necessary to keep the bird in health.

The entire Parrot family is very long lived, it being a recorded fact that they live ninety years in confinement, but the average of a healthy, well-kept bird is twenty-five years.

Teaching to Talk.

A parrot will pick up very readily from any one it hears talking, but, like a child, it is apt to learn what is not desirable, but this can be overcome by the owner of the pet taking it into a room that is quiet for half an hour twice a day, and teaching by repeating to it in the same tone of voice three or four words day after day until learned, always using the same words. It will soon commence to answer, and make use of other words that it has heard casually spoken, and if such words are not desired, they should be frowned on at once, and the bird scolded. If he is encouraged or laughed at, and he repeats the objectionabe words several times, it will be hard to break him of saying them in future.

Never feed parrots meat. If lean it will heat the blood, and cause the bird to pull out its feathers; if fat meat is given it will give the bird the diarrhœa, as in their natural state they live altogether on fruit, seeds, roots and nuts.

PIGEONS.

Most boys love to have pets outside the house, and many prefer the Pigeon to any other. The first thing to be done when you desire to have Pigeons is to prepare a roost or cot, which may be made in any barn, shed, or outhouse, or a large box may be put up sufficiently high to prevent cats or other animals from getting to it. Pigeons must be fed and confined to their cots till they have young, or they will be apt to find other quarters which they may prefer. Then choose your Pigeons, if common ones, which are the best in cities, as they are less liable to be decoyed away, and as they can be had for from forty to fifty cents a pair. A pair of fancy ones will cost you all the way from one to twenty dollars.

Beautiful Varieties.

There are very many beautiful breeds of Pigeons. The Blue Rock Dove is a very handsome bird; also the Pouter, which has the power of inflating its chest to such an extent that they appear to be double the size of the original bird, this quality being greatly admired by boys; the Carrier, on account of its homely head, but good birds to raise young, and as they are used for carrying messages are very amusing; but the Tumbler is the boys' delight as he usually flies high and comes tumbling over and over in the air down to his cot. The Fantails are very beautiful, having many of the characteristics of the peacock. It is really the proudest and prettiest of the Pigeon family. The Trumpeter is an old and very nice bird, making a noise like a trumpet as he brings his wings to the ground, and should be kept by every one laying claim to keeping a collection.

Pigeons very seldom lay more than two eggs, and the period of incubation is eighteen days. Both the male and female assist in the hatching and feeding the young. When first hatched the young feed for about ten days from a food disgorged from the crop of its parents, and after with grain carried in the crop of the old birds. Pigeons and Doves differ from most birds in their mode of feeding their young, and the observation of this will be very interesting to boys, the young thrusting their bill into the open bill of the old Dove, and the food is actually pumped from the old bird's crop into the young bird's.

CHICKENS.

These are also the boys' delight. Like the pigeon fowl have all descended from the one source or specimen, the wild Jungle Fowl of India, a great number of varieties of them existing in the domesticated state, amongst

which the best known are the Spanish, the Polish, the Bramas, the Cochins, the Houdans, the Game, the Bantams, the Malay, the Sikey, the Hamburgs, the Dorkins, and too many other kinds to mention. Chickens require grain, vegetables, meat, water and gravel, when in confinement, but when allowed to run at large they get along nicely when given some grain alone, but in dry weather they should have a good supply of clean water at their roosting-place.

Boxes should be placed up from the floor of the hen-house and straw placed in them for nests, and a decoy egg, which should be made of opal glass or china, put in each nest, and the hens will be much more apt to lay in them than elsewhere, and thereby save you the trouble of going under the house or barn to hunt for eggs.

Breeding.

When a hen has laid from fifteen to twenty eggs she will usually show a desire to set; then if from ten to fourteen eggs are placed under her, which should be from different hens, especially if it is summer-time, so as to make sure of their being fresh, a larger number will hatch out, and in three weeks from the time she commences to set the young should be hatched out, and lovely little balls of down they will be. Crumbled bread soaked in milk and hard-boiled yolk of egg must be in readiness for them to eat, for in a few hours after they are hatched they will begin to pick for themselves. They are very little trouble to keep, and raise themselves if kept out of the way of rats; the old hen will generally keep cats and dogs from them.

Bird Seed.

There are but few persons who consider how much their birds' health depends upon the quality of the seed given to the bird. They think because it is bird-seed it must be all right. What would you think of a housewife that would go and buy a barrel of poor, musty flour to make bread for her children, because it was got nearer home, at the corner grocery, or it cost a few cents less? This holds good in bird-seed, only to a greater extent, and there is even still more danger if you buy the seed done up in fancy packages, which is generally the poorest that can be had in the market. Go to any bird store with a regular established trade, and you can rely upon getting good seed.

GENERAL DISEASES OF BIRDS AND THE PROPER REMEDIES THEREFOR.

Asthma.

This is a disease that all birds are liable to, but the German Canaries more so than any other. It is generally caused from a cold neglected, and sometimes from improper food. Hemp seed should not be given to the German Imported Canaries, except when breeding, and then fed plenty of hard-boiled egg with their other food, they will be better without it. When the bird is attacked with this disease he must be kept on low diet, such as cracker soaked in milk.

Rape and maw seed, also a little lettuce, will be good for him; a little bird tonic in his drinking water, and hang a piece of fat pork well rubbed into pure red pepper in the cage for him to bite on when he desires. When taken in time it can be cured, but when once a bird has had it he will be very liable to get it again.

Want of Appetite.

When this occurs give your bird a small piece of garden sod, so that he can pick the earth and grass both, and any other delicacy that can be thought of, even if it be a little sweet cake.



FAST FRIENDS.

The Oil Gland.

This is a small round lump on the back of the bird, and above the tail, and its use is to supply the bird with the oil necessary to plume its feathers. When this becomes obstructed, as it will sometimes, it gets gorged with oil, and causes the bird much suffering. The bird will appear to be puffed and uneasy, and every once in a while be seen picking at it. Take the bird gently but firmly and pass the point of a fine needle into it in two or three places, and annoint it with a little butter to prevent the perforations from scabbing over, and the bird will do the rest itself.

Moulting.

This is. an annual occurrence with birds, and if the feathers come off freely all that is required is to keep the bird warm and out of drafts, which may be easily done, as the usual time for birds to moult is August and September. It is good to give your bird an extra quantity of nourishing food at this period, as the new feathers which take the place of the old ones cause a great strain on the system of the bird. When the bird does not cast its feathers freely, a small quantity of saffron put into the drinking water, will generally afford relief. Keep the bird warm, covering the cage at night, and hang it in the sun in day, watch for diarrhœa at this time as it is very liable to occur.

Dysentery.

This is often a fatal disease with all birds. The bird affected with it voids a white milky matter, which causes a great deal of pain and inflammation of the intestines, but is generally easily cured, if it is attended to in its early stages, but if allowed to run for twenty-four hours the case is generally hopeless. As soon as detected, which may easily be done, for the bird will generally show a disposition to sit still with its head resting on its wing, this is a notification that your bird feels bad. Look in the bottom of the cage, if the droppings of the bird are white and thin like chalk and water, he has the diarrhœa.

Now put some red pepper into his food, a piece of very rusty iron into his water, and cover the cage up. Set it in a warm place. If the droppings are not thicker in about four hours, add eight or ten drops of brandy, which has laid on blackberries for some time and do not remove the iron. Cover again as before. If seed-eating birds, remove any hemp-seed that may be in the cage and give a little maw-seed in its place with other seed. If soft-feed bird, give more pure mocking-bird food and less vegetable matter, and during the attack no vegetable or fruit should be given to any bird.

Broken Limbs.

When this misfortune is met with the limb must be put into the natural position as nearly as possible, and then secured by splints, or otherwise placed in a low cage without perches, with straw on the bottom, to keep the plumage of the bird from getting soiled; food and water placed in convenient reach of it, and the cage covered up and put in a quiet place, it will usually be as well as ever in a week or ten days.

Constipation.

This is of common occurrence with seed-eating birds. The remedies are vegetable matter, such as lettuce, grass, etc., and in urgent cases a few drops of castor oil should be given, which may readily be done by holding the bird in the left hand, and with a stick brought to a point the oil can be run down its throat. Be careful not to get it on the bird's plumage, and a dose is from three to eight drops, according to the size of the bird.

Egg Bound

is a frequent occurrence with young birds, and they will brood upon an empty nest. The remedy is to annoint the vent of the bird with a little sweet oil, and to administer a dose of castor oil through the bill. Handle gently, for if you break the egg it will likely be the end of all.

Sneezing.

ually caused by cold, and may be relieved by passing a small straw through the nostrils of the bird. Keep the bird out of drafts and keep it warm.



FISH GLOBES.

Huskiness and Loss of Voice.

Usually caused from cold. Never purchase a husky bird, but when he gets so you will have to do the best you can for him, his voice is often restored; but if he lives long he is almost sure to lose it again. Keep the bird in a warm place, give it, if a seed-eating bird, flaxseed and ripe plantain, crackers and milk with a little red pepper on it, and sweet cake with a little sherry wine on it, and a piece of fat pork smoked and rubbed well in red pepper, should be hung in the cage, and a few drops of good tonic should be put into the drinking water.

Long Claws and Beak.

Though not diseases, they will bring them on, when the beak is too long. It prevents the bird from getting its food. When the claws are too long it prevents the bird, through fear of hanging, from getting on or off its perches. This is easily remedied, all that is required is to hold the bird firmly and place its foot on a block; with a sharp knife cut off the surplus growth of the nail, being careful not to cut into the quick, which runs about one-fourth of an inch into the nail from the toe. The surplus beak may be removed in the same way.

The Scab

cometimes makes its appearance about the head and eyes of a bird, and often there is a small ulcer. When so, it should be removed with a sharp knife and the place anointed with fresh butter or sweet oil, and fresh nourishing food, including fruit and vegetables should be given.

Fits or Epilepsy

or fits ofdizziness. Birds attacked with this fall from their perches and struggle. The best remedy is to souse them into a bucket of cold water quickly and place the bird gently down. He will most probably soon recover. When he does put him where he will get perfectly dry, and put a little sherry wine and spirts of nitre in his drinking water to prevent its return, and, in addition, give it more nourishing food. Soon he will appear like a new bird.

Cancer.

Sometimes this makes itself felt to the grief of the canary breeder, as it is contagious, and before it is known what is the matter several birds are affected with it. It is best to destroy a bird so affected. A cure is sometimes effected by bathing the parts frequently with warm water and milk, and anointing with olive oil or butter.

Vermin

sometimes come to birds, but may be easily destroyed, if of the body kind, by anointing the bird under the wings with lard, and placing a clean cloth over the cage at night for a week or ten days. But the red mites are the plague of all bird-fanciers, their habits being the same as the house or bedbug, which trouble all dirty housekeepers. They live in the crevices of the cage, and come out only at night to feed and annoy the bird. They breed so fast that the supply continually increases as long as their food lasts, and their food is the blood of the bird; the only true remedy is to detach the perch that the bird sleeps on from the rest of the cage. As this cannot be done we have now to do the next best thing, and that is to obstruct the passage from the cage to the bird by the use of insecticide. This may easily be done by putting a piece of felt or cloth secured to the ends of the perches by wrapping with wire and saturating it with lard and kerosene oil twice a week.

THE PERCH.

The suspended bird perch, which can be bought at bird stores, is a great ornament to a cage; it is really a set of perches or eight



AQUARIUM.

small arms secured to a centre spindle, and hung by a spring from the hook that the swing is usually secured to. In the centre of

the coiled spring is a piece of felt which, when saturated with kerosene oil, forms a sure barrier against their getting to the bird, so the bird getting rested at night is in better condition and spirits and more in the humor for singing next day.

GRAVEL

must be given to all birds, and if it is spread freely upon the bottom of the cage so much the better.

WATER.

Above everything do not give the bird stale water to drink unless you desire it to die; and if that is your desire you had best kill it, to save it the suffering it will have to endure by being compelled to use impure or rotten water.

AQUARIA.

Gold and Silver fish have been known in this country since the days of Washington. They abound in the fresh, clear waters of China, and are now quite common in our artificial ponds, lakes in parks, etc.; and who has not seen them in glass globes and tanks in the dining-room and parlors of the most refined and better class of citizens, the management and care being so little that it is a surprise that a fish globe is not to be found in every house in the land. The most indolent lady can attend to a fish globe with pleasure.

Globes for fish are best set on a stand, and can be placed on the table, mantel or bracket. Chains are very often used, but should not be. Fish should be kept in a cool place, and the sun never allowed to shine on a globe containing fish or on a tank except in winter-time, and then not on all the tank and only for a short time. Globes should not be more than three-fourths filled with water. The water should be partially changed twice a week, and before filling the globe cover the bottom of it with clean gravel.

FOOD.

Fish do not require much food, but food they must have. There is a prepared food kept at all aquaria goods stores, which is generally good, but fish will do well on a little sweet cracker or bread crumbled into the water, but it must be given in small quantities, for if not eaten it sours in the water, and is injurious to the fish. Earth worms are the very best of food, and can be kept all winter if put into a box of moist earth, which must be kept moist and out of the way of frost. The worms should be cut into small pieces before being given to the fish.

More amusement can be had from the investment of two or three dollars in a globe and fish than in a hundred dollars in theatre tickets, and it will be an interesting ornament to any room, whether poorly or elegantly furnished. The gold, silver and pearl fish are certainly gems, and there are hundreds of others that you can choose at any aquaria goods store, and if the reader be a man or lad, there are many beautiful fish in our own creeks that, with a small net, can be had for the catching of them. Diseases of fish are not many, but if you have many fish in one tank, and you see one sick. which can be easily told by the dull appearance of the fish and his coming to the top of the water to get air, remove it from the tank and place it in a large dish or small tank, and if it does not get better in a day or two it is best to destroy it, as it will not be worth the trouble of trying to cure.

RABBITS.

This is another favorite with the boys, and the common Rabbit is the one most often met with, but the Rabbit is not by any means neglected. There are many kinds of fancy Rabbits, viz.: The Perfect lop-eared, the Oar lop-eared, the Horn Rabbit, the Angora

Rabbit, and the Maltese Rabbit, all of which are very odd looking, but none as handsome as the pure white with pink eyes. Rabbits are very prolific, usually having eight or ten young four times a year; they are amusing and profitable pets, as the young may readily be sold, are easily kept, living upon grass, hay, vegetables, fruit, such as apple parrings, scraps of bread, or any vegetable matter that is not decayed. The young should not be taken from their parents until they are six weeks old.

DOGS.

There being so many different kinds of these kind, affectionate and serviceable animals, a general description of them cannot be given. A puppy under six months old should never have meat given to it, and until a year old no raw meat should be given. Young puppies, bread and milk alone, (which would be good food for some puppies in human form), when older, bread and milk varied with soup and bread, and then some cooked meat, and they must have a good warm bed in a dry place. When so fed and kept they can be generally raised without having the distemper or other sickness.

WHITE MICE.

Another children's pet, which are very pretty, with their lovely pink eyes. They can be trained to do many amusing tricks, and are very tame and hardy; will live upon anything a person can, but corn-meal is their favorite. They are very prolific, having young from four to six times a year, and from five to twelve each time.

WHITE RATS

come to us from China, and are very similar to white mice. When kept clean they make very nice pets. Can be fed on most any refuse from the table, but in addition must have fresh meat twice a week. They are even more prolific than the mice, having usually from eight to fourteen at a litter. The young are very pretty after they are two weeks old; before that time they have no hair on their bodies, the head being as large as the rest of the body, eyes not open.

CATS AND MONKEYS

are pets for the ladies, and as there is such a variety of them, and so few of the latter kept, a description in a work of this kind would be superfluous. If you want a Monkey go to a store of a naturalist and make your selection. If he has not got the kind you want he can show you the pictures and description of so many that it will not be any easier for you to make your selection than than to buy a calico dress when the obliging dry-goods clerk has shown you over one hundred pieces, but after you have made up your mind and give the order for him to get you one, do not go back the next day to try to obtain another kind that you think you might like better, for if he is a prompt and reliable man he will have already sent his order off, and even if you do not hear him, he is very apt to swear at the fickle-mindedness of some people.

Most ladies would call them ugly, but mice and rabbits are born without hair on their skin, so why make all this fuss about Rats?

HELPS FOR THE HOUSEKEEPER

RECEIPTS FOR EVERYDAY USE.

WHETHER, as some persons claim, half the ills of life are due to bad cooking, it is certain a large proportion of them can be traced to injudicious diet and food not properly prepared. It is one of the happy evidences of advancing civilization that cooking has come to be recognized as a science, and schools for teaching the most approved methods have been established in many of our large towns.

To cook well is immensely more important to the middle and working classes than to the rich, for they who live by the "sweat of their brow," whether mentally or physically, must have the requisite strength to support their labor. Every wife, mother or sister should be a good plain cook. If she has servants she can direct them, and if not, so much the more must depend upon herself.

In the selection of provisions the *best* is generally the *cheapest*. Half a pound of good meat is more nutritious than three times the amount of inferior. As to vegetables, get them fresh. Above all, where an income is small and there are many to feed, be careful that all the nourishment is retained in the food that is purchased. This is to be effected by careful cooking. Cleanliness is an imperative condition. Let all cooking utensils be clean and in order. Uncleanliness produces disorder, and disorder confusion. In the cooking of meat by any process whatever, remember, above all, to cook the juices *in* it, not *out* of it.

A Means to Good Health.

Let there be some body to your soup. Vegetable soup is generally the next thing to water, and sometimes so uncomfortably near that it is hard to distinguish them apart. On the other hand, meat soups are often too thick, and, strictly speaking, should be called puddings. Here, as elsewhere, the golden mean is entitled to its name. As much skill can be shown in this part of the culinary art as in preparing a turkey for Thanksgiving.

The strong point in favor of good cooking is not so much to gratify the palate as to perfect the health. The explanation of many fatal disorders is to be found in nothing but badly-cooked and ill-assorted viands. Our households would enjoy better health, and be better able to withstand sickness when it comes, if pains were only taken to have food well chosen and properly cooked.

Life is made all the brighter by satisfactory feeding, and he is a dull philosopher who despises a good dinner. We sit down to the enjoyment of the table more than a thousand times every year, and whoever thoroughly realizes this fact cannot fail to see the necessity of becoming acquainted with the various cooking processes.

RECEIPTS for COOKING

EVERY housekeeper needs a list of well-tried receipts for ready reference. It is impossible to carry in your memory a great number of receipts, with the various articles of which they are compounded. Even if these could be remembered, the proportions might be forgotten; it is therefore necessary to have exact copies of the great variety of receipts which are now recommended by teachers and experts.

Those that are here furnished are the very best, having been thoroughly tested and approved by persons who know what good cooking is. They are of invaluable service in the kitchen.

But we should not only know how to cook, we should also know how to eat. The grand rule in fixing the number and periods of our meals is to proportion them to the real wants of the system as modified by age, sex, health and manner of life, as indicated by the true returns of appetite. As the blood is usually most impoverished after the eight or ten hours' fast of the night, breakfast should be early. The stomach is usually vacated of its contents in about four hours after eating, but it may be an hour or two later before the blood calls for a renewed supply.

Persons engaged in active labor, in which bodily expenditure is rapid, of course require to eat more often than the indolent and sedentary, and children need nourishment oftener than adults. But too long abstinence, especially if the digestive power be not strong, sharpens the appetite, so that there arises danger of excessive eating. Some avoid luncheon, for fear of spoiling the dinner, whereas the thing they most need is to have it spoiled.

Nightmares and Headaches.

When the intervals between the meals are so long as to produce pressing hunger, something should be taken between them to stay the appetite and prevent over-eating. Late and hearty suppers are to be reprobated; active digestion and sleep mutually disturb each other, as at night the exhalation of carbonic gas is lowest, and tissue changes most retarded. The overloaded blood is not relieved, and invades the repose of the brain, producing heavy, disordered dreams and nightmare, followed by headache and ill-humor in the morning.

Still, there is the opposite extreme of sitting up late, and going to bed wearied, hungry, and with an indefinable sense of sinking, followed by restless, unrefreshing

sleep. A little light nourishment in such cases, a couple of hours before retiring, may prevent these unpleasant effects.

Some one has remarked that "the idle man is the devil's man, and it may also be said of the stomach, that if it has nothing to do it will be doing mischief." Food should not be taken after severe exercise, nor should exercise of very active character be taken immediately after eating. Too much food overpowers the nervous system as much as excessive muscular exercise. To sum up all under this head, people must be more careful what they eat, at what times they eat, how much they eat, if they would preserve the healthy condition of the vascular and nervous systems.

There can be no precise rule laid down for the governance of all. A little careful observation, however, would teach every one of mature age what is best adapted to his particular organization. If men would watch with half as much anxiety the influence of different articles of food on their systems as they do the effects of growing crops and financial failures on the money market, longevity would oftener be obtained than large fortunes.

SOUPS

OYSTER SOUP.—Two quarts strained oyster liquor, season with pepper and salt to taste and boil. Then add 100 oysters; let all boil together till oysters curl, skimming constantly; remove oysters to tureen and thicken the soup with 3 tablespoons butter rubbed smoothly into the yolks of 2 hard-boiled eggs, boil in a separate vessel (to prevent curdling), 1 qt. milk; pour on oysters in tureen and add soup last.

Tomato Soup.—Take 1 qt. cooked tomatoes, 1 qt. hot water; bring to a boiling point, then add 1 teaspoon soda, after which add 1 pt. hot milk and season with pepper and salt. Just before serving add ½ cup cracker crumbs.

Bouillon.—Take 4 lbs. from the middle of the round, 2 lbs. bone, 2 qts. cold water, 1 tablespoon salt, 4 pepper corns, 1 tablespoon mixed herbs; cut meat and bones in small pieces, simmer 5 hours, boil down to 3 pts., strain, remove the fat and season with salt and pepper; serve. Boil in 1 onion, ½ carrot and turnip if liked.

White Stock Soup.—Six lbs. knuckle of veal, ½ lb. lean bacon, 2 tablespoons butter rubbed in 1 of flour, 2 onions, 2 carrots, 2 turnips, 3 cloves stuck in an onion, 1 blade mace, bunch of herbs, 6 qts. water, pepper and salt, 1 cup boiling milk.

Cut up the meat and crack the bones. Slice carrots, turnips, and 1 onion, leaving that with the cloves whole. Put on with mace, and all the herbs except the parsley, in 2 qts. cold water. Bring to a slow boil; take off the scum as it rises, and at the end of an hour's stewing add the rest of the cold water—1 gal. Cover and cook steadily, always gently, 4 hours.

Strain off the liquor, of which there should be about 5 qts.; rub the vegetables through the colander and pick out bones and meat. Season these highly and put, as is your Saturday custom, into a wide-mouthed jar or a large bowl. Add to them 3 qts. stock, well salted, and when cold keep on ice. Cool

to-day's stock; remove the fat, season, put in chopped parsley and put over the fire. Heat in a saucepan a cup of milk, stir in the floured butter; cook 3 minutes. When the soup has simmered 10 minutes after the last boil, and been carefully skimmed, pour into the tureen and stir in the hot, thickened milk.

Beef Soup.—Have a beef's shank chopped into convenient pieces at the butcher's. Put in a kettle and cover with water. Put a close cover on and boil till the meat drops from the bones. Strain through a colander and let it set in a cool place over night. In the morning the fat will be hard on the top. Skim carefully and put over the fire. Slice carrot, onion and turnip and fry them brown and use for seasoning. Boil slowly for an hour. Just before dishing add a very little sugar, 5 cloves, 10 kernels allspice and a teaspoon of celery salt. Strain again and serve.

Beef Heart Soup.—Take 1 beef heart, cut off most of the fat and wash it thoroughly. Then put the heart into a kettle with 1½ gal. cold water and boil until tender. Just before it is quite done add salt to the taste. Have ready a variety of finely chopped vegetables—about 1 qt.—to which may be added a small quantity of either macaroni, rice or vermicelli. Boil all together for 1 hour. Serve hot with cubes of golden brown toast, and you will enjoy a delicious soup. Better satisfaction will be given if the heart is removed from the broth before adding the vegetables. It may then be stuffed and baked, sliced for sandwiches or made into a fine hash.

Turtle Soup.—A turtle weighing 8 or 10 lbs.; cut off its head and let drain. Remove from the shell, selecting the liver and eggs and carefully discarding the gall. Quarter the turtle, lay in a pan and pour over it boiling water; scrape it clean and cut off claws, then place it in cold water, wash thoroughly and wipe dry. In a soup kettle brown 3 tablespoons flour with a large tablespoon lard, then add one medium sized onion chopped fine.

Cut the meat of turtle in small pieces and fry in the lard and flour till partially cooked, then add 1 gal. water and boil slowly until reduced one-half. When meat is tender add following spices: small tablespoon cinnamon, 1 teaspoon mace and 12 or 15 cloves, all beaten fine; also add thyme, parsley, salt and pepper, both cayenne and black. Before serving add 1 tumbler Madeira and one-half tumbler claret, also the juice and rind of 1 lemon. If the turtle has eggs, add them to the soup about 15 minutes before serving.

Soup for an Invalid.—Cut in small pieces 1 lb. beef or mutton, or a part of both; boil gently in 2 qts. water, take off the scum, and when reduced to a pint strain it, season with a little salt, and take a teacup at a time.

Ox-Tail Soup.—Take 2 ox-tails and 2 whole onions, 2 carrots, a small turnip, 2 tablespoons flour and a little white pepper, add a gallon of water, let all boil for 2 hours; then take out the tails and cut the meat into small pieces, return the bones to the pot for a short time, boil for another hour, then strain the soup, and rinse 2 spoons arrowroot to add to it with the meat cut from the bones, and let all boil for ¼ of an hour.

Veal Broth.—Put a knuckle of veal in 4 qts. water, with 1 onion and 2 or 3 stalks of celery. Boil slowly, and when the meat is done, strain. Add 2 oz. rice or vermicelli and season to taste. Be careful not to let the rice cook too much.

Mutton Broth.—Put 3 lbs. neck of mutton into 2 qts. water, with 2 onions and 2 small turnips sliced. Boil slowly 2 hours, strain, season to taste and add a little rice.

Mutton Broth.—Put a few pounds of mutton into cold water and boil till tender,

skim off the grease and season to taste. This is excellent for invalids.

Chicken Broth.—Boil a young chicken in 2 or 3 qts. water till tender. Skim off the oil and season to taste. Some prefer a little thickening; if so, add a little flour mixed smooth with water.

French Tomato Soup.—One qt. tomatoes, 3 pts. boiling water, 1 even teaspoon each of soda, pepper and salt, butter size of egg, 1 small minced onion, 1 qt. milk. Put onions and tomatoes over the fire with the hot water, strain and rub through a colander. Boil the milk, stir in the butter and soda, and after one boil keep hot. Put pepper and salt with tomatoes, simmer 5 minutes, then stir in the milk; serve at once. Omit onions for mock turtle soup.

Vegetable Soup.—One cup rice to 1 qt. cold water; let it come to a boil, then chop fine a small cabbage and 6 onions together, cook slowly till most done, then take 4 large potatoes, slice them round, put in to cook till soft enough to put a fork through them; now add salt to taste, then milk to thin it down, a little butter if you wish it. Be sure not let it burn, add more water if it thickens too much.

Delicious Vegetable Soup.—One teacup onions, 1 teacup carrots, 1 teacup turnips, 1 teacup celery, 1 teacup parsnips, all cut fine. Cover with water and simmer for 2 hours or more until perfectly done. Boil later 1 to 5 potatoes very thoroughly and when done skim from the water; strain through colander. Strain also vegetables when thoroughly done. Put vegetables and potatoes into soup kettle and add 1 tablespoon chopped parsley. Melt 1 tablespoon butter with equal part flour, rub smooth, add pepper and salt and stir into the boiling compound. Serve with toasted bread in form of dice.

Potato Soup—No. 1.—Boil ½ doz. good sized potatoes with a little celery, parsley and onions chopped fine. Brown a few slices of dry bread, butter and cut fine. Pour the soup over this and serve at once.

Potato Soup—No. 2.—Pare 1 doz. good-sized potatoes and slice them ½ inch thick, then cut into squares or diamonds and boil very carefully till tender to the fork. Add 2 qts. sweet milk, bring to a boil and thicken a little. Add 3 or 4 hard boiled eggs,sliced fine or chopped, and seasoning to taste.

Potato and Celery Soup.—Five good-sized potatoes, as much celery as you like, 3 pts. water. Boil until tender, then put through strainer, add 1 pt. sweet cream, salt, butter and pepper to taste.

Celery Soup.—One qt. soup stock, 3 bunches celery chopped fine, cooked ½ hour, 1 qt. milk put in just long enough before using to boil up, add enough flour to thicken the least bit, also pepper and salt. Serve hot.

Cream Celery Soup.—Take 2 qts. veal stock, 2 bunches celery, 2 cloves, 2 onions, 3 peppercorns, 1 string parsley; boil 1 hour and strain, then add 1 pt. whipped cream. After dished season with salt to taste. Tapioca or asparagus may be substituted for celery.

Macaroni Soup.—Boil ½ lb. macaroni until tender in as little water as will cook it well. Put a knuckle of veal into cold water and boil about 2 hours, add a stalk or two of celery and boil ½ hour longer; then strain through a colander, add the macaroni, boil together a few minutes, add a little cream or milk and season to suit the taste.

Noodle Soup.—Boil a shin of beef till tender, take out the bone and strain the liquor through a colander, then season to taste and add the noodles, which are made as follows: Break 1 egg into a basin, add flour enough to make a stiff dough, roll out

very thin and sprinkle lightly with flour, then roll up as you would a roll of jelly cake and slice up into thin slips, shake out and put into the soup. Boil about 10 minutes, and it is ready to serve.

Friar's Duck Soup.—Have some good clear consomme well seasoned and boiling, beat 4 yolks of eggs with 1 pt. cream, pass the custard through a muslin strainer. Five minutes before serving add the custard to the consomme. Do not let it boil. Cut the breast of chicken into tiny strips (as the vegetables are for a julienne soup), and add them to the soup and serve.

Egg Dumplings for Soup.—To ½ pt. sweet milk add 2 well-beaten eggs and as much sifted flour as will make a thick smooth batter. Drop a spoonful at a time into the boiling soup, cover closely and boil 6 minutes.

Rice Soup.—Stew 3 lbs. beef in 2 or 3 qts. water. When partly done add 1 onion and a small bunch of sweet herbs, and boil slowly till the meat is very thoroughly cooked, then strain and add a handful of rice and cook till it is soft, then add seasoning to taste.

Gumbo Soup.—Stew 2 qts. tomatoes ½ hour, add 2 qts. okra, shredded, flavor with thyme, onion and parsley. Boil slowly together till tender. Stew a chicken and season with butter. Beat the yolks of two eggs with 1 tablespoon vinegar. Put this mixture, with the chicken, into the kettle of tomatoes. Cover all with water and boil 4 hours. Take out the bones and season soup to taste. This is very nice.

Bean Soup.—Put 1 pt. beans into 2 qts. water, with a small soup bone and boil 2½ hours. Take out the bone, season the soup to taste and thicken with ½ tablespoon flour, beaten smooth in a little milk. Pea soup may be made in the same way.

White Soup.—Cut up 1 large chicken, put into a soup pot with ½ gal. cold water and 1 lb. veal, off the leg, cut into squares. When the white meat is quite done and tender, take it out of the soup and separate from bone. Chop this very fine, or grind it in a meat cutter; with this mix 1 pt. bread crumbs that have been soaked in a pint of boiling milk, the yolks of six hard boiled eggs made into a smooth paste with a little cold water and ½ teaspoon of the extract of almond. Strain the soup from the rest of the chicken and veal and mix very gradually with the paste, putting only a little of the hot liquid on at a time. When this is done put soup back on the fire till it comes to a boil for a few moments, and just before serving pour into the soup a heated pint of rich cream.

Wine Soup.—Take any large, fat fowl, either chicken, duck or goose, if it is old so much the better, provided it is fat. Cut it up and break the bones and boil 3½ hours in a gallon of water, or until the fowl is thoroughly done. Have ready a teacup of well-browned flour, which mix into a smooth paste with a little of the soup before adding it to the kettle, having first taken out the particles of the fowl; ½ hour before it is done add a handful of allspice and 3 blades mace. Crumble the yolks of 6 hard-boiled eggs and add them 15 minutes before the soup is taken off. Just as it is served pour in a large wine glass of sherry or Madeira wine.

Clam Soup.—Bring to a boil 2 qts. water, seasoning to taste, and a few rolled crackers. Then add 1 can clams, with the liquor that is on them, and boil about 5 minutes.

Mock-Turtle Soup.—Soak 1 pt. black beans for 12 hours. Chop up the meat from a beef shank and put on to boil with the beans. Season to taste. Cover the bones

with water and boil for 6 hours, then put the liquor into the beans. Add 2 eggs well beaten, then press the soup through a colander and serve with slices of lemon.

Julienne Soup.—Cut up 3 onions and fry them brown in a little butter. Add seasoning to taste, a little mace and 3 tablespoons strong stock. Add turnip, celery and carrot cut fine. Throw in a few green peas. Boil until the vegetables are tender. Strain for the table.

Vermicelli Soup.—Boil ½ lb. vermicelli till tender, then add to it some meat liquor, boil together a few minutes and season to taste.

Bisque Soup.—Equal parts milk and strained tomato (1 pt. each), heat in separate dishes; to the tomato add a piece of butter the size of a walnut, salt and a little nutmeg. Let the milk boil and thicken slightly with flour. When ready to serve put a piece of soda the size of a pea into the tomato, and pour into the milk.

Green Pea Soup.—Wash a small quarter of lamb in cold water, and put it into a soup-pot with six quarts of cold water; add to it two tablespoonfuls of salt, and set it over a moderate fire; let it boil gently for 2 hours, then skim it clear; add a quart of shelled peas and a teaspoonful of pepper; cover it, and let it boil for half an hour; then having scraped the skins from a quart of small young potatoes, add them to the soup; cover the pot and let it boil for half an hour longer; work quarter of a pound of butter and a dessert spoonful of flour together, and add add them to the soup 10 or 12 minutes before taking it off the fire. Serve the meat on a dish with parsley sauce over and the soup in a tureen.

Corn Soup.—Cut the corn from the cob, and boil the cobs in water for at least an hour, then add the grains and boil until they are thoroughly done; put 1 doz. ears of corn to a gallon of water, which will be reduced to 3 qts. by the time the soup is done; then pour on a pint of new milk, 2 well-beaten eggs, salt and pepper to your taste; continue the boiling a while longer, and stir in, to season and thicken it a little, a tablespoonful of good butter rubbed up with 2 tablespoonfuls of flour. Corn soup may also be made nicely with water in which a pair of grown fowls have been boiled or parboiled, instead of having plain water for the foundation.

Philadelphia Pepper Pot.—Put 2 pounds of tripe and 4 calves' feet into the soup-pot and cover them with cold water; add a red pepper and boil closely until the calves' feet are boiled very tender; take out the meat, skim the liquid, stir it, cut the tripe into small pieces, and put it back into the liquid; if there is not enough liquid, add boiling water; add half a teaspoonful of sweet marjoram, sweet basil and thyme, 2 sliced onions, sliced potatoes, salt. When the vegetables have boiled until almost tender, add a piece of butter rolled in flour, drop in some egg balls and boil fifteen minutes more. Take up and serve hot.

Dried Bean Soup.—One pint dried beans, half pound ham, 1 quart of stock, 1½ quarts of boiling water, salt and pepper to taste. Wash the beans and soak them over night. In the morning drain the water off, and cover them again with the boiling water; add the ham and boil gently two hours. Now, add the stock. Press the beans through a sieve, return them to the soup kettle, and bring to a boil. Add salt and pepper, and serve with toasted bread.

To Get Up a Soup in Haste.—Chop some cold cooked meat fine, and put a pint into a stew-pan with some gravy, season with pepper and salt and a little butter if the gravy is not rich; add a little flour moistened with cold water, and 3 pints boiling

water, boil moderately half an hour. Strain over some rice or nicely toasted bread and serve. Uncooked meat may be used by using 1 quart of cold water to a pound of chopped meat, and letting it stand half an hour before boiling. Celery root may be grated in as seasoning, or a bunch of parsley thrown in.

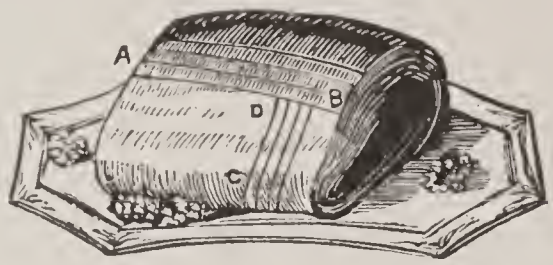
FISH

TO BOIL FISH.—Boil the fish in half water and half vinegar, with salt, 3 small onions, ½ lemon cut up, pepper, allspice and cloves. When done draw aside to keep warm while you prepare the sauce. Rub together ¼ pound butter, the yolks of 4 eggs and a tablespoon flour; when well mixed add of the liquor in which the fish was boiled as much as you need for the sauce. Cook the same 4 minutes, drain the fish well, lay on the dish and pour sauce over it.

Fish Chowder.—Half lb. salt pork cut in small pieces, 2 large onions sliced, 3 large potatoes sliced, 6 crackers soaked in milk, salt, pepper and parsley to taste. Put in the kettle a layer of pork, then cod, onions, seasoning, potatoes and crackers, then again the same, cover with cold water and stew gently an hour and a half.

Thick Cream Sauce for Salmon.—Melt 2 even tablespoons butter in saucepan, add 4 heaping tablespoons flour, ½ teaspoon salt, ½ saltspoon white pepper, ½ teaspoon celery salt, a little cayenne pepper. When thoroughly cooked in butter, add 1 pt. hot cream or rich milk; add very gradually, stirring all the time. Put in shredded salmon.

Puree of Salmon.—Remove the oil, bones and skin from ½ can of salmon, chop salmon very fine, heat together for 10 minutes 1 slice of onion, 1 quart of milk, and then remove the onion, melt 1 tablespoon butter, add 2 tablespoons flour, 1 teaspoon salt and 1 saltspoon pepper; mix well and add to the hot milk; add the salmon and when heated strain and serve.



MIDDLE CUT OF SALMON.

Salmon is cut in slices down the middle of the upper side, as from A to B, and then in slices across, D to C, on the under side; a little of the "thick" or upper side, and "thin" or under side, are put on each plate.

To Fry or Broil Fish Properly.—After the fish is well cleansed, lay it on a folded towel and dry out all the water. When well wiped and dry, roll it in wheat flour, rolled crackers, grated stale bread or Indian meal, whichever may be preferred; wheat flour will generally be liked.

Have a thick-bottomed frying-pan or spider, with plenty of sweet lard salted; (a tablespoonful of salt to each pound of lard), for fresh fish which have not been previously salted; let it become boiling hot, then lay the fish in and let it fry gently, until one side is a fine delicate brown, then turn the other; when both are done, take it up carefully and serve quickly, or keep it covered with a tin cover and set the dish where it will keep hot.

To Bake a Large Fish Whole.—Cut off the head and split the fish down nearly to the tail; prepare a nice dressing of bread, butter, pepper and salt, moistened with a little water. Fill the fish with this dressing and sew together with needle and strong thread. Lay the fish on a grate, on a bake-pan or dripping-pan, and pour round it a little water and melted butter. Baste frequently. A good-sized fish will bake in an hour. Serve with the gravy of the fish, drawn butter or oyster sauce.

Croquettes of Fish.—Bone fish of any kind, chop thoroughly, season to taste. Beat up an egg with a little flour and milk. Roll into balls, dip in beaten egg, dredge with cracker crumbs and fry in hot butter. Brown on both sides and serve for breakfast. Salt fish, freshened over night, is very nice prepared in this way.

Boiled Cod.—Lay the fish in cold water, a little salt, for ½ hour. Wipe dry and sew up in linen cloth, coarse and clean, fitted to the shape of the piece of cod. Have but one fold over each part. Lay in the fish-kettle, cover with boiling water, salted at discretion. Allow nearly an hour for a piece weighing 4 lbs.

Cod Pie.—Any remains of cold cod, 12 oysters, sufficient melted butter to moisten it, mashed potatoes enough to fill up the dish.

Mode: Flake the fish from the bone and carefully take away all the skin. Lay it in a pie-dish, pour over the melted butter and oysters (or oyster sauce, if there is any left), and cover with mashed potatoes. Bake for ½ hour to a nice brown color and send to table.

Dried Codfish.—This should always be laid in soak at least one night before it is wanted; then take off the skin and put it in plenty of cold water; boil it gently (skimming it meanwhile) for 1 hour, or tie it in a cloth and boil it.

Serve with egg sauce, garnish with hard boiled eggs cut in slices and sprigs of parsley. Serve plain boiled or mashed potatoes with it.

Codfish Cakes.—First boil soaked cod, then chop it fine, put to it an equal quantity of potatoes boiled and mashed; moisten it with beaten eggs or milk, add a bit of butter and a little pepper; form it in small round cakes, rather more than ½ in. thick; flour the outside and fry in hot lard or beef drippings until they are a delicate brown; like fish, these must be fried gently, the lard being boiling hot when they are put in; when one side is done turn the other. Serve for breakfast.

Codfish Gravy.—Pick up about 1 lb. codfish and soak over night. Boil a few minutes in fresh water, and when tender drain off the water and add 1 qt. milk. When it comes to a boil, add some thickening. Beat 1 egg into the thickening, or add 2 or 3 hard boiled eggs sliced fine.

To Fry Smelts.—Egg and bread-crumbs, a little flour, boiling lard. Smelts should be very fresh, and not washed more than is necessary to clean them. Dry them in a cloth, lightly flour, dip them in egg, and sprinkle over with very fine bread-crumbs, and put them into boiling lard. Fry to a nice pale brown, and be careful not to take off the light roughness of the crumbs, or their beauty will be spoiled. Dry them before the fire on a drainer, and serve with plain melted butter.

Baked Haddock.—Choose a nice fish of about six pounds, which trim and scrape nicely, gutting it carefully, fill the vacuum with a stuffing of veal, chopped ham, and bread-crumbs; sew up with strong thread, and shape the fish round, putting its tail into its mouth, or, if two are required, lay them

along the dish reversed—that is, tail to head; rub over with plenty of butter, or a batter of eggs and flour, and then sprinkle with bread-crumbs. Let the oven be pretty hot when put in. In about an hour the fish will be ready. Serve on the tin or dish in which they have been baked, placing them on a larger dish for that purpose. Mussel sauce is a good accompaniment.

Baked Salmon or Halibut.—Let the fish lay for twenty minutes in cold salt water. Place it on a gridiron across a dripping-pan, and bake in a moderately hot oven for an hour, if the fish is large. Half that time will be sufficient for a small fish. Butter the top just before serving, and put back in the oven for a minute to brown nicely. To the gravy that has dropped into the dripping-pan, add 1 tablespoon Worcestershire sauce, 1 of tomato catsup, and the juice of 1 lemon. Beat a heaping teaspoon of flour in a little cold water, and thicken. Serve this sauce with the fish.

Boiled Pike.—Scale and clean the pike, and fasten the tail in its mouth by means of a skewer. Lay it in cold water and when it boils, throw in the salt and vinegar. The time for boiling depends, of course, on the size of the fish; but a middling-sized pike will take about half an hour. Serve with Dutch or anchovy sauce, and plain melted butter.

Baked White Fish.—Clean and wash the fish thoroughly, wipe with a cloth, and rub the inside with salt. Make a dressing as for chicken, stuff the fish, and sew up with twine; then put into a dripper with a little hot water. Dip a sheet of white paper in some melted butter or olive oil, and cover the fish for the first 20 minutes or ½ hour. Then remove the paper, and baste occasionally. Be sure to have the fish a nice brown when done. It will need to bake from 1 to 2 hours, according to size of fish.

To Broil Shad a la Shipman.—Freshen through the day, if salt, hanging the fish to drain at bed-time. In cooking proceed as with fresh shad. Rub the bars of the gridiron smooth and grease them slightly and lay the shad upon it with the skin down; broil very slowly 20 minutes and take care not to scorch; turn and repeat the broiling (flesh side down) for 10 to 15 minutes. Have ready cream and butter, add the butter by spreading it upon the flesh side of the fish, set it for a moment in the oven and add the cream as it goes to the table. If the fish is fresh, wash clean, and salt and pepper over night if for breakfast.

Oyster Stew.—One-fourth quart milk, 1 doz. oysters; put in milk and let it get to the boiling point, put in oysters and leave in milk until oysters swell nicely, then take off. Seasoning can be put in before or after taking off as preferred.

Escalloped Oysters.—Put a layer of rolled cracker in an oval dish and then a layer of oysters. Dredge with salt and pepper and moisten with sweet cream. Add another layer of crackers, oysters, cream and seasoning as before. Continue these alternate layers until the dish is nearly full, then cover with a thin layer of crackers and pieces of butter. If the dish be a large one it will require 1½ hours to bake.

Oyster Toast.—Select 15 plump oysters, chop them fine, add salt, pepper and a suspicion of nutmeg. Beat up the yolks of 2 eggs with a gill of cream; whisk this into the simmering oysters; when set, pour the the whole over the slices of buttered toast.

Deviled Oysters.—Take 25 nice fat oysters, ½ pt. cream, 1 table-spoon butter, 2 table-spoons flour, 1 table-spoon chopped parsley, yolks of 2 eggs, salt and cayenne pepper to taste. Drain the oysters and chop them middling fine and drain again, put the

cream on to boil, rub the butter and flour together and stir into the cream while boiling; as soon as it thickens take it from the fire and add all the other ingredients—beat the yolks before adding them. Have the deep shells of the oysters washed perfectly clean, fill them with this mixture, sprinkle lightly with bread-crumbs, put them in a baking pan and brown in a quick oven for 5 minutes. Serve in the shells. Garnish with parsely.

Deviled Lobster.—One pt. cream, 2 tablespoons butter, ⅓ teaspoon dry mustard, a pinch of cayenne pepper, ¼ teaspoon salt, 1 can shredded lobster without juice and yolk of 1 egg. Bake brown in scalloped shells with bread-crumbs and a bit of butter on the top of each.

Stewed Oysters a la Delmonico.—Take 1 qt. liquid oysters, put the liquor from the oysters in a stew pan, and add ½ as much water, salt, pepper, a teaspoon butter for each person and a teaspoon rolled cracker for each. Put on the stove and let boil; when it boils pour in the oysters; there will be about 10 for each person. As soon as it begins to boil count 30 slowly, after which remove the oysters from the stove. Have dish ready with 1½ tablespoons cold milk for each person. Pour the stew on this and serve. Never boil the milk.

Broiled Oysters.—Drain the oysters well and dry them with a napkin. Have ready a griddle hot and well buttered; season the oysters; lay them to griddle and brown them on both sides. Serve them on a hot plate with plenty butter.

Panned Oysters.—Put ½ tablespoon butter in pan; when it bubbles add oysters, salt, red pepper, Worcestershire sauce, tomato catsup, green pepper chopped.

Shell Oysters.—*To Feed.*—Wash them and lay round side down in a jar, tub, or pan, and sprinkle oatmeal or cornmeal, with a little salt over them, and cover them with salted water. Do this once a day and they will soon get fat.

To Stew.—Open them, taking care to save the liquor, which should be strained, and and wash the oysters from the grit. For every dozen oysters add their liquor and 1 pt. water, with a few cracker crumbs and seasoning. Bring to a boil, and add a little sweet cream.

To Roast.—Place the oysters, unopened, on a broiler, and roast about 8 minutes.

To Scallop.—Put a layer of oysters on the bottom of a pan, then a layer of bread or cracker crumbs, with seasoning, a little butter, and the liquor from the oysters. Add another layer of oysters, with seasoning as before; also a little milk or water. Cover with cracker crumbs, and bake in the oven to a nice brown.

To Fry.—Wash the oysters and lay on a cloth to absorb the moisture. Beat up 1 or 2 eggs and dip the oysters into the beaten egg and then roll in bread or cracker crumbs, and fry a nice brown in butter.

Clam Chowder.—One-half peck clams. Wash them clean to remove the sand, have a very little water boiling in a kettle over a hot fire, put in the clams, let boil about 10 or 15 minutes, or until they open. Skim out into a pan, save the water they were boiled in. When cool, open with a knife. To make the chowder, have about 1 doz. good-sized potatoes pared and sliced thin, 3 or 4 onions prepared the same, and a good pint of cracker crumbs.

A porcelain-lined kettle is best to make it in. Put in about 1 cup butter, then a layer of potatoes, a little of the onion, a layer of clams, also of crackers, a little seasoning and so on until the ingredients are all used. Add the water the clams were boiled in, and if

that does not cover the chowder, add boiling water. Let cook over a gentle fire about ½ hour. If it seems to be sticking on, stir, but otherwise do not stir until done.

To Cook Terrapins, Maryland Style.—After bleeding them at least an hour, put them into warm water; a young one will boil tender in half an hour. Be careful not to cut off the heads, as it will make them watery. The terrapin is done when the shell comes off easily. Be careful in picking them not to break the gall, as that will make the whole meat bitter, and do not waste the liquor. To 3 terrapins put ¾ lbs. butter and a little salt. For those who like it, wine is added to the taste.

Crab Pie.—Parboil 12 large crabs and pick them, slice as thin as possible some stale bread, butter well and lay them in a little milk. Put a layer of this bread at the bottom of the baking dish, then a layer of crab, sprinkle with salt, cayenne and a slice of lemon cut very thin and in small pieces, cover this with bits of nice fresh butter, then commence with bread again and repeat the whole; put a layer of bread on top, bake for ½ hour. Shrimp may be used instead of crab. For 1 doz. crabs use ½ lb. butter.

Soft Shell Crabs.—These should be cooked as soon as possible after being caught, as their flavor rapidly deteriorates after being exposed to the air. Select crabs as lively as possible, remove the feathery substance under the pointed sides of the shells, rinse them in cold water, drain, season with salt and pepper, dredge them in flour and fry in hot fat.

Meats, and How to Carve Them

GENERAL DIRECTIONS.—To make fresh meat rich and nutritious it should be placed in a kettle of *boiling* water (pure soft water is best), skimmed well as soon as it begins to boil again, and placed where it will *slowly* but constantly boil. The meat should be occasionally turned and kept well under the water, and fresh hot water supplied as it evaporates in boiling. Plunging in hot water hardens the fibrine on the outside, encasing and retaining the rich juices—and the whole theory of correct cooking, in a nut-shell, is to retain as much as possible of the nutriment of food.

Roasting proper is almost unknown in these days of stoves and ranges—baking, a much inferior process, having taken its place. In roasting the joint is placed close to a brisk fire, turned so as to expose every part to the heat, and then moved back to finish in a more moderate heat. The roast should be basted frequently with the drippings, and, when half cooked, with salt and water.

In roasting all meats, success depends upon basting frequently (by dipping the gravy from the pan over the meat with a large spoon), turning often so as to prevent burning, and carefully regulating the heat of the oven. Allow fifteen to twenty-five minutes to the pound in roasting, according as it is to be rare or well done, taking into consideration the quality of the meat. Roasts prepared with dressing require more time. In roasting meats many think it better not to add any water until the meat begins to brown.

Broiling is the most wholesome method of cooking meats, and is most acceptable to invalids. Tough steak is made more tender by pounding or hacking with a dull knife, but some of the juices are lost by the operation; cutting it across in small squares with



JOINTS OF BEEF.

1. Sirloin.
2. Top, or aitch bone.
3. Rump.
4. Buttock, or round.
5. Mouse buttock.
6. Veiny piece.
7. Thick flank.
8. Thin flank.
9. Leg.
10. Fore rib (5 ribs).
11. Middle rib (4 ribs).
12. Chuck rib (3 ribs).
13. Shoulder.
14. Brisket.
15. Clod.
16. Sticking.
17. Shin.
18. Cheeks or head.

a *sharp* knife on both sides is better than either. Tough meats are also improved by laying for two hours on a dish containing three or four table-spoons each of vinegar and salad oil (or butter), a little pepper, but no salt; turn every twenty minutes. The action of the oil and vinegar softens the fibers without extracting their juices. Trim off all superfluous fat, but never wash a freshly-cut steak. Never salt or pepper steak or chops before or while cooking, but if very lean, dip in melted butter.

When you buy beef, select that which is of a clear cherry-red color after a fresh cut has been for a few moments exposed to the air. The fat should be of a light straw color, and the meat marbled throughout with fat. If the beef is immature, the color of the lean part will be pale and dull, the bones small, and the fat very white. High-colored, coarse-grained beef, with the fat a deep yellow, should be rejected.

In corn-fed beef the fat is yellowish, while that fattened on grasses is whiter. In cow-beef the fat is also whiter than in ox-beef. Inferior meat from old or ill-fed animals has a coarse, skinny fat and a dark red lean. Ox-beef is the sweetest and most juicy, and the most economical. When meat pressed by the finger rises up quickly, it is prime, but, if the dent disappears slowly, or remains, it is inferior in quality.

Joints for Roasting.—Ribs, sirloin, chump of rump, mouse buttock, top side, fillet of sirloin, tongue (fresh), heart.

Joints for Salting.—Round, aitch-bone, silver-side, brisket, tongue.

Joints for Frying or Broiling.—Rump-steak, beef-steak (well beaten), liver.

Joints for Stewing.—Beefsteak, topside, brisket, and inferior portions, liver, ox-tail.

Joints for Puddings and Pies.—Beefsteak, fillet.

Joints for Soup and Gravy.—Shin, cheeks and inferior parts, ox-tail.

To Make Tough Meat Tender, for 5 or 6 lbs.—Put the meat into an earthen bowl with enough cold water and vinegar, equally mixed, to half cover it; add plenty of pepper to keep off the flies, a carrot, a turnip and a

small onion sliced, a stalk of celery, a root of parsley, a blade of mace, 10 cloves, an inch of cinnamon and a few bits of lemon peel. Turn the meat several times daily in the pickle for a week, and then cook like *beef a la mode*, first browning it with half a cup of flour, then add the pickle and enough boiling water to make a good gravy; season it palatably and simmer the meat in it for about 3 hours, keeping it covered; strain the scraps of vegetables from the gravy before serving both hot, with plain potatoes or any preferred vegetable.

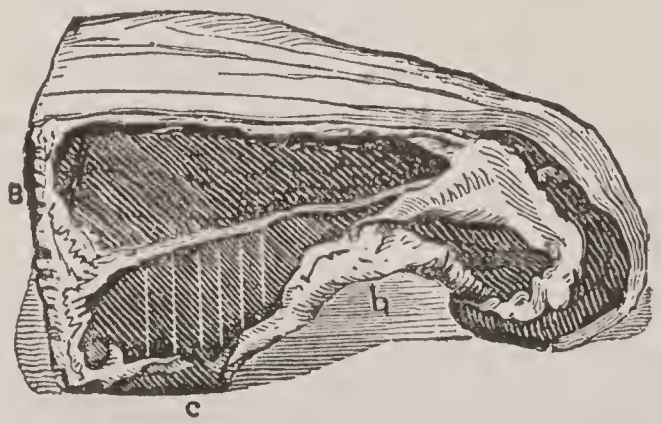
Broiled Beefsteak.—Put a gridiron over the hot coals. A steel gridiron with slender bars is to be preferred, as the broad bars seem to fry the steak. Have a platter with a little melted butter on it. When the steak is done on one side lay it on the platter, the cooked side down, for half a minute: then broil the other side and serve it in the same manner. Sift a little seasoning on it, butter lightly; place in the oven for an instant and serve at once on hot plates.

Fried Beefsteaks.—Cut some of the fat from the steak and put it in a frying pan and set it over the fire; if the steaks are not very tender beat them with a rolling pin, and when the fat is boiling hot put the steak evenly in, cover the pan and let it fry briskly until one side is done, sprinkle a little pepper and salt over and turn the other; let it be rare or well done as may be liked; take the steak on a hot dish, add a wineglass or less of boiling water or catsup to the gravy; let it boil up once and pour it in the dish with the steak.

Gravy.—Put table-spoon flour into the skillet, stir till brown and free from lumps, add ½ pint milk, stir well and season.

Beefsteak Pie.—Take some fine tender steaks, beat them a little, season with a salt-spoon of pepper and a tea-spoon of salt to 2 lbs. of steak; put bits of butter, the size of a hickory nut, over the whole surface, dredge a tea-spoon of flour over, then roll it up and cut in pieces 2 inches long; put a rich pie paste around the sides and bottom of a tin basin; put in the pieces of steak, nearly fill the basin with water, add a piece of butter the size of a large egg, cut small, dredge in a tea-spoon of flour, add a little pepper and salt, lay skewers across the basin, roll a top crust to half an inch thick, cut a slice in the center; dip your fingers in flour and neatly pinch the top and side crusts together all around the edge. Bake one hour in a quick oven.

Roast Beef.—The sirloin and rib pieces are best for roasting. Season, dredge lightly with flour, and place in the oven. Baste frequently. For rare beef, a quarter of an hour to the pound is the rule, but the quality of the meat should determine the time. Thicken the drippings with browned flour, add a little Worcestershire sauce, if you like. Serve in a gravy-dish. Some prefer the red juice from the meat, as it is carved. An onion sliced and put on top of a roast while cooking, gives a nice flavor. Remove the onion before serving.



SIRLOIN OF BEEF.

A sirloin of beef is cut across for the under cut and lengthwise for the upper.

Roast Beef with Yorkshire Pudding.—Roast the beef upon a grate laid across a dripping-pan. Forty minutes before it is done, pour the pudding into the pan below,

first having strained out the fat. Finish roasting the beef, which will drip on the pudding. The pudding will be done as soon as the beef. (Allow fifteen minutes to the pound if you like it rare, twenty, if well done.) Cut the pudding into squares. Dish the meat, and lay the squares of pudding around it.

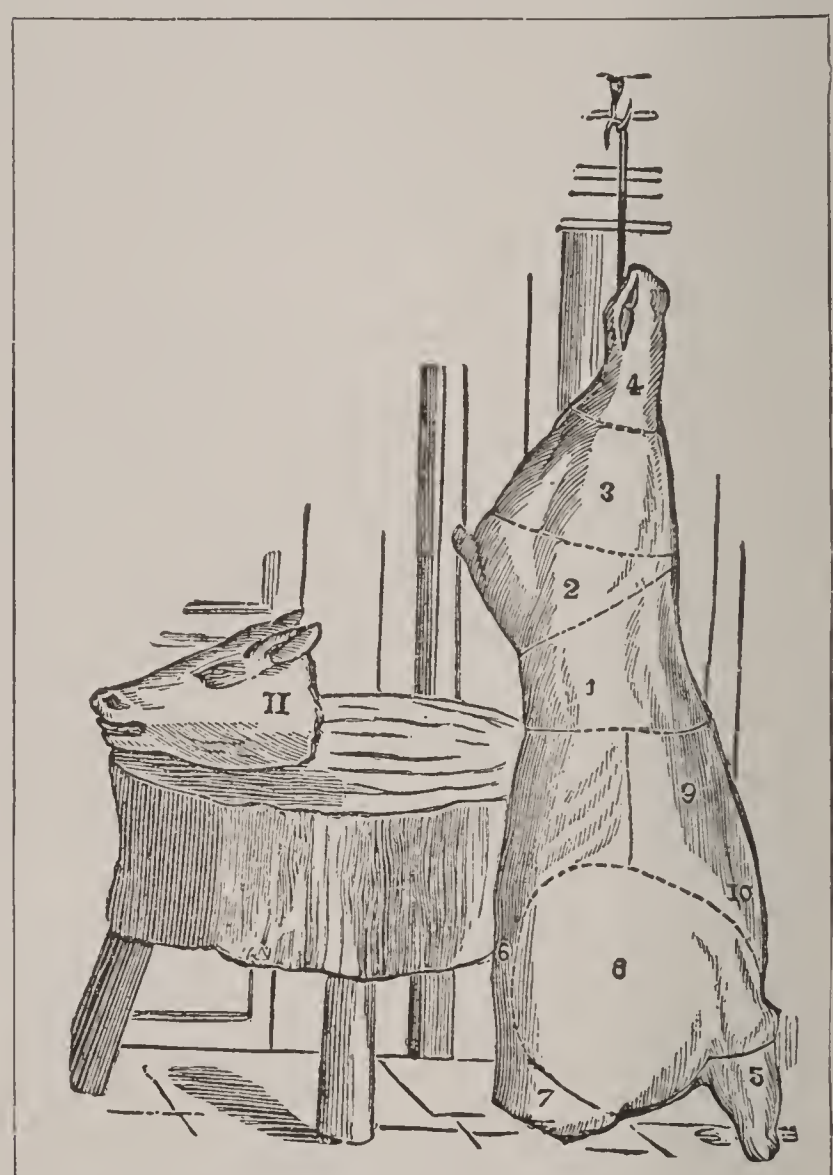
Yorkshire Pudding.—Mix 4 table-spoons flour with 1 pt. milk, 3 eggs, yolks and whites beaten separately, and a little salt. Make the batter thin. Bake in a shallow tin pan 10 minutes, then put under the grate where the beef is roasting. Leave the pudding in the oven a few minutes after the beef is taken up. Before serving, pour off the fat from the top.

Scalloped Beef.—Take cold corned or roast beef, cut off all the sinew and fat, and cut into small pieces not more than half an inch square. Line the bottom of a pudding dish with a crust made of sea-foam crackers crumbled fine and moistened with milk; then cover with a layer of meat. Season with pepper and salt and sprinkle with bits of butter. Alternate the layers and cover with a crust of crackers moistened with milk. Before putting on the upper crust add a cupful of nice gravy or of milk and hot water with a small lump of butter; cover with a plate or pie-tin and bake 45 minutes. Remove the cover and brown nicely.

Beef Loaf.—Take 3½ pounds of beef chopped very fine; round steak is best, 2 well-beaten eggs, 6 small crackers rolled fine, 1 cup sweet milk, a piece of butter size of an egg, salt, pepper and sage to taste. Mix well, press into a bread tin, cover with a tin and bake 2½ hours, occasionally basting with butter and hot water.

How to Select Veal.—It should be small, of a pinky white, and the kidney should be well covered with fat. The calf should not be killed after it is eight to ten weeks old, or the meat will be coarse. Large, coarse veal is cheaper than the more delicate kind. The flesh should be closely grained and dry; if it is moist and clammy, it is approaching decomposition and is not fit for cooking.

Pieces for Roasting.—Fillet, breast, best end; liver and brisket, best and scrag ends; neck, best ends; heart, sweetbread.



JOINTS OF VEAL.

1. Loin, best end.
2. Loin, chump end.
3. Fillet.
4. Hind knuckle.
5. Fore knuckle.
6. Neck, best end.
7. Neck, scrag end.
8. Blade-bone.
9. Breast, best end.
10. Breast, brisket end.
11. Head.

For Pie.—Inferior parts.

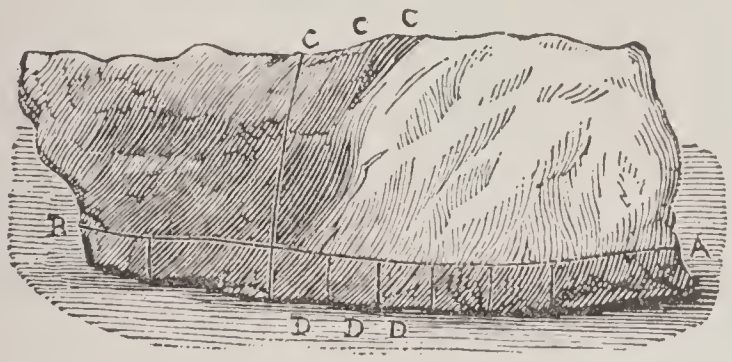
For Boiling.—Knuckle, part of shoulder, head, tongue and brains.

For Frying.—Cutlets from shoulder, etc., liver.

For Stewing.—Breast, brisket end; neck, scrag and best end; sweetbread, feet.

For Soup.—Inferior parts, as knuckle, scrag, etc.

To Roast Veal.—Rinse the meat in cold water; if any part is bloody, wash it off; make a mixture of pepper and salt, allowing a large teaspoon of salt and saltspoon of pepper for each pound of meat, wipe the meat dry, then rub the seasoning into every part, shape it neatly and fasten it with skewers, and put it on a spit or set it on a trivet or muffin rings in a pan; stick bits of butter over the whole upper surface, dredge a little flour over, put a pint of water in the pan to baste with, and roast it before the fire in a Dutch oven or reflector, or put it into a hot oven; baste it occasionally, turn it if necessary that every part may be done; if the water wastes add more, that the gravy may not burn; allow 15 minutes for each pound of meat, a piece weighing 4 or 5 pounds will then require one hour, or an hour and a quarter. Veal should be thoroughly cooked; no meat undercooked is more unpalatable.



BREAST OF VEAL.

A breast of veal is used for roasting, stewing, ragout, and it is sometimes boiled so as to roll, or a large hole is made in it for stuffing. In carving a breast of veal, the ribs should be first separated from the brisket from A to B. The small bones are considered the choicest. Cut them as at D D D, and the long bones at C C C, and serve according to preference.

Veal Chops.—Cut veal chops about an inch thick, beat them flat with a rolling-pin, put them in a pan, pour boiling water over them and set them over the fire for 5 minutes, then take them up and wipe them dry; mix a tablespoon of salt and a teaspoon of pepper for each pound of meat, rub each chop over with this, then dip them first into beaten egg, then into rolled crackers as much as they will take up, then finish by frying in hot lard or beef dripping, or broil them. For the broil have some sweet butter on a steak dish, broil the chops until well done over a bright clear fire of coals (let them do gently that they may be well done), then take them on to the butter, turn them carefully once or twice in it and serve.

Or dip the chops into a batter made of 1 egg beaten with ½ teacup milk and as much wheat flour as may be necessary. Or simply dip the chops without parboiling into wheat flour, make some lard or beef hot in a frying-pan, lay the chops in and when one side is a fine delicate brown turn the other. When all are done take them up, put a very little hot water into the pan, then put it in the dish with the chops.

Or make a flour gravy thus: After frying them as last directed, add a tablespoon more of fat to that in the pan, let it become boiling hot; make a thin batter of a small tablespoon of wheat flour and cold water, add a little more salt and pepper to the gravy, then gradually stir in the batter; stir it until it is cooked and a nice brown, then put it over the meat or in a dish with it; if it is thicker than is liked, add a little boiling water.

Veal Cutlets.—Two or 3 lbs. of veal cutlets, egg and bread-crumbs, 2 tablespoons minced savory herbs, salt and pepper to taste, a little grated nutmeg.

Cut the cutlets about ¾ of an inch in thickness, flatten them and brush them over with the yolk of an egg; dip them into bread-crumbs and minced herbs, season with pepper and salt and grated nutmeg, and fold

each cutlet in a piece of buttered paper. Broil them and send them to the table with melted butter or a good gravy.

Fillet of Veal.—Stuff with dressing as for fowls, the dressing being placed in the hollow where the bone was taken out. Roast to a nice brown and serve with brown gravy.

Fillet of Veal Boiled.—Tie it round with tape and put into a floured cloth. Plunge into cold water and boil for 2½ hours. Serve with oyster or egg sauce.

Loin of Veal Roasted.—Make a stuffing and lay it in the loin, then tie up. Put into the dripper with a little water. When nearly done, dredge with flour and baste with butter. Add a little more water, and make a nice brown gravy.

Loin of Veal Boiled.—Plunge a loin of veal into a kettle of cold water, boil slowly for about 2 hours. Remove the scum as it rises, and serve with parsley and melted butter.

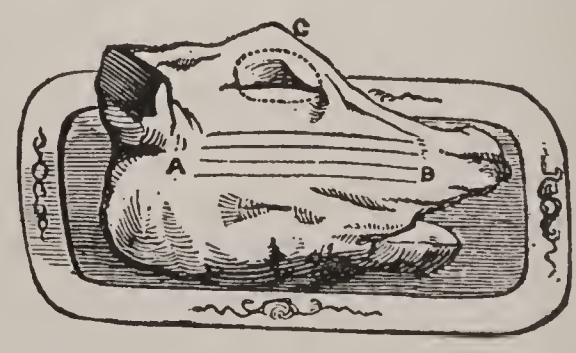
Veal Pot-Pie.—Cut up some veal into small pieces and boil in 2 or 3 qts. of water till tender. Season while cooking. Take out the veal and make a soft biscuit dough with soda or baking powder. Add this dough to the liquor in spoonfuls and boil 10 or 15 minutes. The pieces of veal may be served in the same dish with the pot-pie.

Beef or Veal Pie.—Make a crust something like tea biscut, only a little shorter. Line a deep pie-plate or dish with the crust. Take the cold pieces of meat left after baking or boiling, put in a layer of meat, sprinkle thick with cracker crumbs, add seasoning to taste, and a piece of butter the size of an egg. Add hot water enough to moisten the cracker well. Lay on the upper crust. Bake about an hour in a moderate oven. Serve with mashed potatoes, and it is also quite nice cold for lunch or supper.

Pressed Veal.—Boil 2 or 3 lbs. of veal till tender. Cut or pick it up into small pieces, and press into a mold or deep tin. Put ½ oz. of gelatine into the liquor it was boiled in, and pour this gravy over the meat. It will look and taste very nice. When cold it should be sliced with a sharp knife.

Boiled Calf's Head (without the skin.)—Calf's head, water, a little salt, 4 table-spoons melted butter, 1 table-spoon minced parsley, pepper and salt to taste, one table-spoon of lemon-juice.

After the head has been thoroughly cleaned, and the brains removed, soak it in warm water to blanch it. Lay the brains also into warm water to soak, and let them remain for about an hour. Put the head into a stew-pan, with sufficient cold water to cover it, and when it boils, add a little salt; take off every particle of scum as it rises, and boil the head until perfectly tender. Boil the brains, chop them, and mix with them melted butter, minced parsely, pepper, salt and lemon-juice in the above proportion. Take up the head, skin the tongue, and put it on a small dish with the brains round it. Have ready some parsley and butter, smother the head with it, and the remainder send to table in a tureen. Bacon, ham, pickled pork, or a pig's cheek are indispensable with calf's head. The brains are sometimes chopped with hard-boiled eggs.

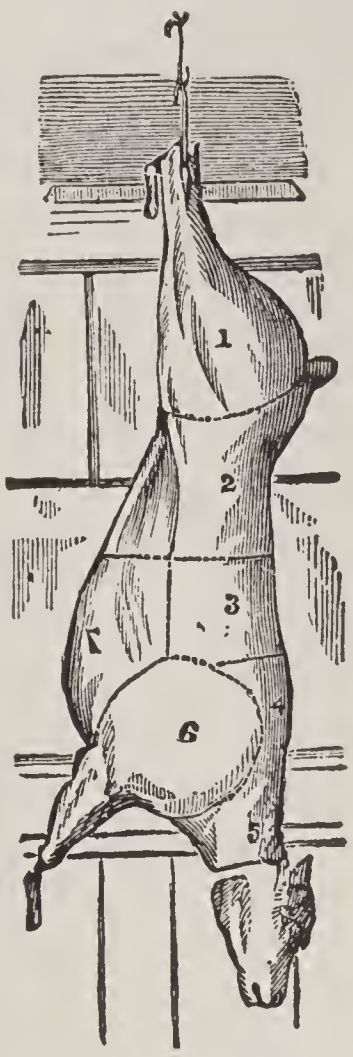


HALF OF CALF'S HEAD.

A calf's head must be cut down the center in rather thin slices on each side, from A to B. The meat round the eye is scooped out by cutting a circle at C; it is considered a

delicacy. A small piece of the palate and accompanying sweetbread must be sent on each plate.

How to Select Mutton.—It is best at 4 to 7 years of age. The color should be dark red. It should be fat in order for it to be tender and of good flavor. The fat should be very white and firm, and the lean should be fine grained and firm also. Mutton is



JOINTS OF MUTTON.

A sheep is thus divided :
1. Leg.
2. Chump end Loin.
3. Best end Loin.
4. Neck, best end.
5. Neck, scrag end.
6. Shoulder.
7. Breast.

A saddle is the two loins undivided.

A chine is the two sides of the neck undivided.

considered best during the fall of the year, or perhaps it would be nearer the mark to say from August to New Year. The flavor of mutton is thought to be improved by keeping it a few days after it is killed. It should be hung in a cool, dry place away from flies, and should be wiped dry every day.

In choosing mutton remember that the brisket is first to become tainted, and that part of the meat that lies around the kidneys. Wether mutton is much the better. It can be distinguished from the ewe by its larger bones and darker meat. A leg of mutton furnishes the most economical family dinner. It shrinks less than other joints in the cooking, and has a solidity and substance that makes it "go farther" than most meats.

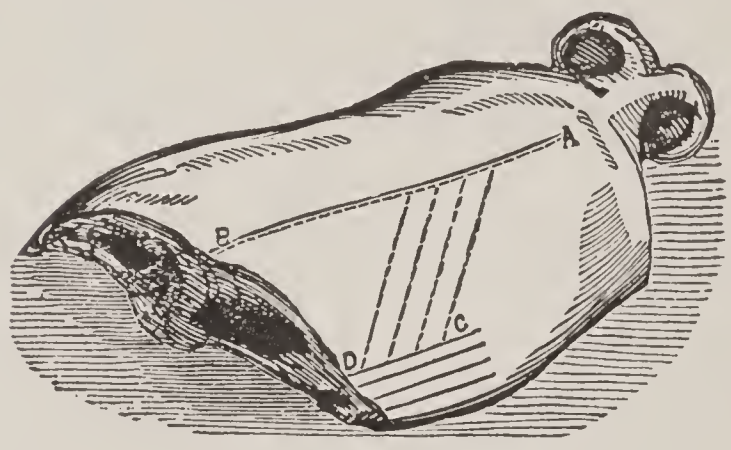
Parts to Roast.—Saddle, haunch, leg, chump end of loin, best end of loin, best end of neck, shoulder, breast, chine, head, heart.

Salted.—Leg for ham.

Boiled.—Leg, neck, scrag end and middle.

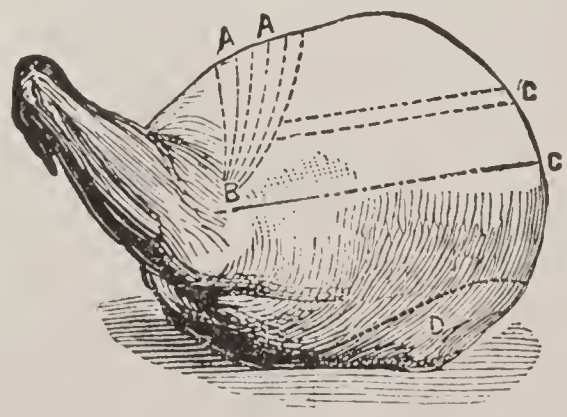
Fried and Broiled.—Chops and cutlets from loin and neck, cutlet from leg.

Stewed.—Scrag of neck.



SADDLE OF MUTTON.

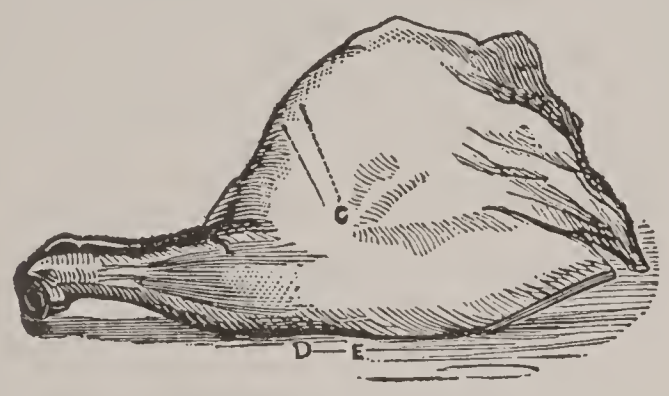
A saddle of mutton is the joint ordered for a small dinner party. It is cut in very thin slices close to the back bone, B to A, and then downward, from A to D and C. But a lady is scarcely ever required in the present day to carve a saddle of mutton.



SHOULDER OF MUTTON.

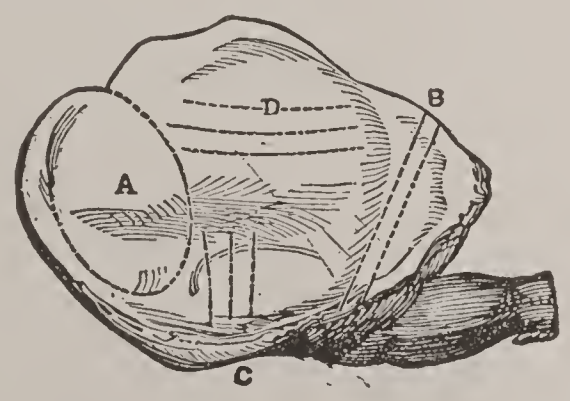
A shoulder of mutton must lie with the knuckle toward the right and the blade bone toward your left hand. In the middle of the

part farthest from you place the fork, and then give one sharp cut from the edge to the bone. The meat flies apart and you cut rather thick slices on each side of the opening, A to B, till you can cut no more. Then there are two or three slices from the center bone to the end, B to C. Afterward turn over the joint and cut slices from the under side. Some people, instead of cutting the joint in this manner, begin with the slices cut lengthwise near the middle of the joint from the end to the knuckle.



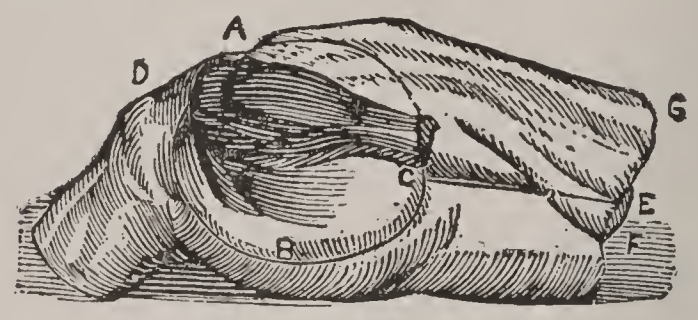
LEG OF MUTTON.

A leg of mutton must be placed with the knuckle toward the left hand; you then cut into the side farthest from you toward the bone, B to C, helping thin slices from the right and thick slices toward the knuckle. The little tuft of fat near the thick end is a delicacy and must be divided among your guests.



LOIN OF MUTTON.

A loin of mutton is carved either through the joints, which brings it into the form of "chops," or it is cut lengthwise in a parallel line with the joints, thus: The cut at A is a thin slice of brown meat, followed by other slices cut in succession. At D long slices can be removed by cutting through to the bone. The long lines at B and the short ones at C indicate the situation of similar cuts. This is the best mode for a lady, but a loin is rather for family consumption than for guests.



FOREQUARTER OF LAMB.

A forequarter of lamb consists of a shoulder, the breast and the ribs. If a lady is obliged to carve this joint, she must first place her knife upon the shoulder, draw it through horizontally, and then remove the joint whole, placing it on a separate dish, which is held for its reception. She must then cut off the breast and separate the ribs (see cut), but the cook should always cut off the shoulder and leave it *on* the joint.

The hindquarter consists of a leg and loin.

Boiled Leg of Mutton.—Cut off the shank-bone, trim the knuckle and wash the mutton, put it into a pot with salt and cover with boiling water. Allow it to boil a few minutes, skim the surface clean, draw your pot to the side of the fire and simmer until done. Time, from 2 to 2½ hours. Do not try the leg with a fork to determine whether it is done or not, you will lose all the juices of the meat by so doing. Serve with drawn butter.

Roast Loin of Mutton.—Loin of mutton, a little salt; cut and trim off the superfluous fat, and see that the butcher joints the meat properly, as thereby much annoyance is saved to the carver when it comes to table. Have ready a nice clear fire (it need not be a very wide, large one), put down the meat,

dredge with flour and baste well until it is done.

Broiled Mutton Chops.—Loin of mutton, pepper and salt, a small piece of butter; cut the chops from a well-hung, tender loin of mutton, remove a portion of the fat and trim them into a nice shape; slightly beat and level them, place the gridiron over a bright, clear fire, rub the bars with a little fat and lay on the chops. While broiling frequently turn them, and in about 8 minutes they will be done. Season with pepper and salt, dish them on a very hot dish, rub a small piece of butter on each chop and serve very hot and expeditiously.

Mutton Chop Fried.—Cut some fine mutton chops without much fat, rub over both sides with a mixture of salt and pepper, dip them in wheat flour or rolled crackers, and fry in hot lard or beef drippings; when both sides are a fine brown, take them on a hot dish, put a wineglass of hot water in the pan, let it become hot, stir in a teaspoon of brown flour, let it boil up at once and serve in the pan with the meat.

Roast Forequarter of Lamb.—Lamb, a little salt. To obtain the flavor of lamb in perfection it should not be long kept; time to cool is all that is required; and though the meat may be somewhat thready, the juices and flavor will be infinitely superior to that of lamb that has been killed two or three days. Make up the fire in good time, that it may be clear and brisk when the joint is put down. Place it at sufficient distance to prevent the fat from burning, and baste it constantly till the moment of serving. Lamb should be very thoroughly done without being dried up, and not the slightest appearance of red gravy should be visible, as in roast mutton; this rule is applicable to all young white meats. Serve with a little gravy made in the dripping-pan, the same as for other roasts, and send to table with it a tureen of mint sauce.

Roast Mutton.—A leg or saddle of 10 lbs. weight will require 2½ or 3 hours' roasting. Put into a pan with a little flour and water and salt. When nearly done, sprinkle flour over it. Baste well in its own drippings.

Irish Stew.—Stew some mutton chops till they are half done, then add some onions sliced thin and some potatoes cut in halves and a carrot sliced fine. Just before dishing up add a little thickening.

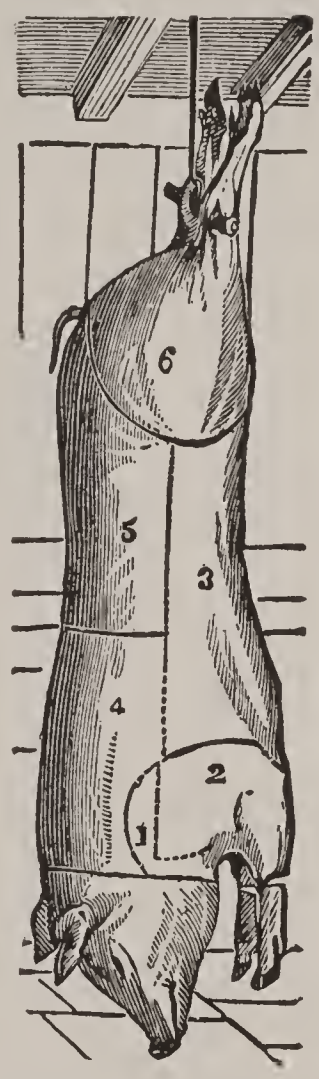
How to Select Pork.—See that the fat is firm, and the lean white and finely grained, the skin or rind thin and smooth. If the flesh feels clammy, the pork is bad. If the fat has kernels in it, the pig has been measly. Very red flesh signifies scarlet fever. Pork is the driest and fattest of meat. Bacon and hams are salted and smoked pig's flesh. The pig's blood is used in black and white puddings.

Parts Roasted.—Spare rib, Loin, Leg, and Head. *Salted and Boiled.*—Belly, Chop, Leg, Head, Hand, Pettitoes, Chine, and Tongue. *Fried*—Chops from Loin, Pig's Fry, and Sausages.

Roast pork is never seen at dinner parties, but is occasionally served at a family dinner, as it is a favorite dish with very many. It must be placed on the table with the back upward, and the crackling taken off before any attempt is made to cut the meat. The leg is carved like a leg of mutton, but the slices should be thicker and not so large. Slices of the crackling may be tendered with each serving of the meat.

To Roast a Leg of Pork.—Take a sharp knife and score the skin across in narrow stripes (you may cross it again so as to form diamonds) and rub in some powdered sage. Raise the skin at the knuckle and put in a

stuffing of minced onion and sage, bread crumbs, pepper, salt, and beaten yolk of egg. Fasten it down with a buttered string, or with skewers. You may make deep incisions in the meat of the large end of the leg, and stuff them also, pressing in the filling very hard. Rub a little sweet oil all over the skin with a brush or a goose feather, to make it crisp and of a handsome brown.



JOINTS OF PORK.

A pig is thus divided :
1. Spare Rib.
2. Hand.
3. Belly.
4. Fore Loin.
5. Hind Loin.
6. Leg.

The chine is the neck whole.

A leg of pork will require from 3 to 4 hours to roast. Moisten it all the time by brushing it with sweet oil, or with fresh butter tied in a rag. To baste it with its own dripping will make the skin tough and hard. Skim the fat carefully from the gravy, which should be thickened with a little flour.

A roast leg of pork should always be accompanied by apple sauce, and by mashed potatoes and mashed turnip.

Pigs in Blanket.—Choose fresh, large oysters, slice breakfast bacon very thin, roll each oyster in a slice of bacon and pin through with a hard wood toothpick. Do not use fat in frying, the bacon is sufficient. Serve immediately on a hot platter.

Pork and Beans.—Pick over carefully a quart of beans and let them soak over night; in the morning wash and drain in another water, put on to boil in cold water with ½ a teaspoon of soda; boil about 30 minutes (when done the skin of a bean will crack if taken out and blown upon), drain, and put in an earthen pot first a slice of pork and then the beans, with 2 or 3 tablespoons of molasses.

When the beans are in the pot, put in the centre ½ or ¾ of a lb. of well-washed salt pork with the rind scored in slices or squares, and uppermost; season with pepper and salt if needed; cover all with hot water, and bake six hours or longer in a moderate oven, adding hot water as needed; they cannot be baked too long. Keep covered so that they will not burn on the top, but remove cover an hour or two before serving, to brown the top and crisp the pork.

Pork Sausages.—Take such a proportion of fat and lean pork as you like, chop it quite fine, and for every 10 lbs. of meat take 4 oz. of fine salt, and 1 of fine pepper; dried sage or lemon thyme, finely powdered, may be added if liked; a teaspoon of sage, and the same of ground allspice and cloves, to each 10 lbs. of meat. Mix the seasoning through the meat, pack it down in stone pots, or put it in muslin bags; or fill the hog's or ox's guts, having first made them perfectly clean, thus: empty them, cut them in lengths, and lay them three or four days in salt and water, or weak lime water, turn them inside out once or twice, scrape them, then rinse them, and fill with the meat.

If you do not use the skin or guts, make the sausage-meat up the size and shape of sausage, dip them in beaten egg, and then into wheat flour, or rolled crackers, or simply into wheat flour, and fry in hot lard. Turn them, that every side may be a fine color. Serve hot, with boiled potatoes or hominy; either taken from the gravy, or after they are fried, pour a little boiling water into the gravy in the pan, and pour it over them, or first dredge in a teaspoon of wheat flour, stir it until it is smooth and brown, then add a little boiling water, let it boil up once, then put it in the dish with the sausage.

Chopped onion and green parsley may be added to the sausage meat, when making ready to fry.

Or sausage-meat may be tied in a muslin bag, and boiled, and served with vegetables; or let it become cold, and cut in slices.

"Mississippi Sausage."—Eight lbs. lean tenderloin, 6 lbs. backbone fat, 4 teaspoons black pepper, 2 teaspoons salt, 1 teaspoon cayenne pepper, 7 tablespoons sage. Mix well after grinding.

Pork Chops, Steaks and Cutlets.—Fry or stew pork chops, after taking off the rind or skin, the same as for veal.

Cutlets and steaks are also fried, broiled, or stewed, the same as veal.

Roast Pig.—Thoroughly clean the pig, then rinse it in cold water, wipe it dry; then rub the inside with a mixture of salt and pepper, and if liked, a little pounded and sifted sage; make a stuffing thus: Cut some wheat bread in slices ½ in. thick, spread butter on to half its thickness, sprinkled with pepper and salt, and if liked, a little pounded sage and minced onion; pour enough hot water over the bread to make it moist or soft, then fill the body with it and sew it together, or tie a cord around it to keep the dressing in, then spit it; put a pint of water in the dripping-pan, put into it a tablespoon of salt, and a teaspoon of pepper, let the fire be hotter at each end than in the middle, put the pig down at a little distance from the fire, baste it as it begins to roast, and gradually draw it nearer; continue to baste occasionally; turn it that it may be evenly cooked; when the eyes drop out it is done; or a better rule is to judge by the weight, 15 minutes for each pound of meat, if the fire is right.

Have a bright clear fire, with a bed of coals at the bottom; first put the roast at a little distance, and gradually draw it nearer; when the pig is done stir up the fire, take a coarse cloth with a good bit of butter in it, and wet the pig all over with it, and when the crackling is crisp take it up; dredge a little flour into the gravy, let it boil up once, and having boiled the heart, liver, etc., tender, and chopped it fine, add it to the gravy, give it one boil, then serve.

Pig's Cheek.—Is smoked and boiled like ham with vegetables; boiled cabbage or fried parsnips may be served with it.

Roast Spare-Rib.—Trim off the rough ends neatly, crack the ribs across the middle, rub with salt and sprinkle with pepper, fold over, stuff with turkey dressing, sew up tightly, place in dripping-pan with pint of water, baste frequently turning over once so as to bake both sides equally until a rich brown.

Pork Fritters.—Have at hand a thick batter of Indian meal and flour; cut a few slices of pork and fry them in the frying-pan until the fat is fried out; cut a few more slices of the pork, dip them in the batter and drop them in the bubbling fat, seasoning with salt and pepper; cook until light brown and eat while hot.

Baked Ham.—Cover your ham with cold

water and simmer gently just long enough to loosen the skin so that it can be pulled off. This will probably be from 2 to 3 hours, according to the size of your ham. When skinned put in a dripping pan in the oven, pour over it a teacup of vinegar and 1 of hot water, in which dissolve a teaspoon English mustard; bake slowly, basting with the liquid, for two hours. Then cover the ham all over to the depth of 1 inch with coarse brown sugar, press it down firmly, and do not baste again until the sugar has formed a thick crust, which it will soon do in a very slow oven.

Let it remain a full hour after covering with the sugar, until it becomes a rich golden brown. When done drain from the liquor in the pan and put on a dish to cool. When it is cool, but not cold, press by turning another flat dish on top with a weight over it. You will never want to eat ham cooked in any other way when you have tasted this, and the pressing makes it cut firmly for sandwiches or slicing.

To Boil a Ham.—Wash thoroughly with a cloth. Select a small size to boil, put it in a large quantity of cold water and boil 20 minutes for each pound, allowing it to boil slowly; take off the rind while hot and put in the oven to brown half an hour; remove and trim.

To Broil Ham.—Cut some slices of ham ¼ of an inch thick, lay them in hot water for half an hour or give them a scalding in a pan over the fire, then take them up and lay them on a gridiron over bright coals; when the outside is browned turn the other, then take the slices on a hot dish, butter them freely, sprinkle pepper over and serve; or, after scalding them, wipe them dry, dip each slice in beaten egg and then into rolled crackers and fry or broil.

A ham may be cut in three ways: By beginning at the knuckle, which must be turned toward the left hand, and cut in a slanting direction, or at the thick end, which is then turned toward your left; or in the ordinary manner, like a leg of mutton, beginning in the center. The slices must be as thin and delicate as they can be cut. One slice is given as an accompaniment to fowl or veal.

Ham Toast.—Mince finely ¼ of a pound of cooked ham with an anchovy boned and washed; add a little cayenne and pounded mace; beat up two eggs, mix with the mince and add just sufficient milk to keep it moist; make it quite hot and serve on small rounds of toast or fried bread.

Head-Cheese.—After thoroughly cleaning a hog's head or pig's head, split it in two with a sharp knife, take out the eyes, take out the brains, cut off the ears and pour scalding water over them and the head and scrape them clean. Cut off any part of the nose which may be discolored so as not to be scraped clean; then rinse all in cold water and put it into a large kettle with hot (not boiling) water to cover it, and set the kettle (having covered it) over the fire; let it boil gently, taking off the scum as it rises; when boiled so that the bones leave the meat readily, take it from the water with a skimmer into a large wooden bowl or tray; take from it every particle of bone, chop the meat small and season to taste with salt and pepper, and if liked, a little chopped sage or thyme.

Spread a cloth in a colander or sieve, set it in a deep dish and put the meat in, then fold the cloth closely over it, lay a weight on which may press equally the whole surface (a sufficiently large plate will serve); let the weight be more or less heavy, according as you may wish the cheese to be fat or lean; a heavy weight by pressing out the fat will

of course leave the cheese lean. When cold take the weight off, take it from the colander or sieve, scrape off whatever fat may be found on the outside of the cloth, and keep the cheese in the cloth in a cool place, to be eaten sliced thin, with or without mustard and vinegar or catsup.

After the water is cold in which the head was boiled, take off the fat from it and whatever may have drained from the sieve or colander and cloth, put it together in some clean water, give it one boil, then strain it through a cloth and set it to become cold, then take off the cake of fat. It is fit for any use.

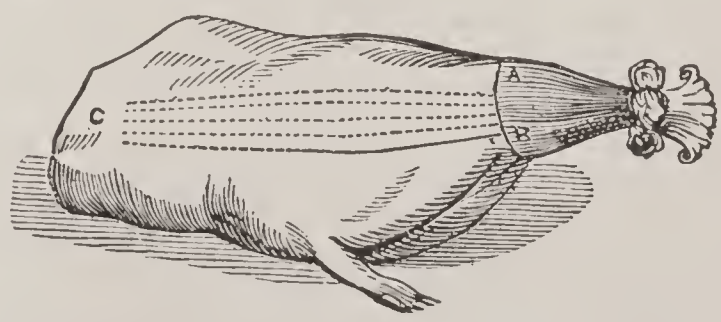
Pig's Feet Soused.—Scald and scrape clean the feet; if the covering of the toes will not come off without, singe them in hot embers until they are loose, then take them off. Many persons lay them in weak lime water to whiten them. Having scraped them clean and white, wash them and put them in a pot of hot (not boiling) water with a little salt and let them boil gently, until by turning a fork in the flesh it will easily break and the bones are loosened. Take off the scum as it rises.

When done take them from the hot water into cold vinegar enough to cover them, add to it one-third as much of the water in which they were boiled, add whole pepper and allspice, with cloves and mace if liked, put a cloth and a tight-fitting cover over the pot or jar. Soused feet may be eaten cold from the vinegar, split in two from top to toe, or having split them, dip them in wheat flour and fry in hot lard, or broil and butter them. In either case let them be nicely browned.

To Make Lard.—Take the leaf fat from the inside of a bacon hog, cut it small and put it in an iron kettle, which must be perfectly free from any musty taste; set it over a steady, moderate fire until nothing but scraps remain of the meat; the heat must be kept up, but gentle that it may not burn the lard; spread a coarse cloth in a wire seive, and strain the liquid into tin basins which will hold 2 or 3 qts.; squeeze out all the fat from the scraps.

When the lard in the pans is cold, press a piece of new muslin close upon it, trim it off at the edge of the pan and keep it in a cold place. Or it may be kept in wooden kegs with close covers. Lard made with ⅓ as much beef suet as fat is supposed by many persons to keep better.

Venison, Roast (a New York recipe).—Take any joint, according to taste and requirements, and cook it in the usual coat of paste and paper. Flour it well, mixing ground ginger and pepper with the flour, and let it be well frothed. Make a thick sauce by putting a pint of pure tomato pulp in a lined saucepan, with a teaspoonful of extract of meat and half an ounce of chopped capers; an ounce of black currant jelly should be put in a few minutes later, together with the same weight of brown roux. Season with salt, a pinch of white sugar and ginger, a dash of cayenne and a squeeze of lemon juice. Send to table very hot and pour a little plain gravy round the meat. This can be recommended.



To carve a haunch of venison, place the loin nearest you. Make a cut from A to B, then serve slices from A to C. Serve fat from the left side. Venison, in order to be a delicacy, must be of prime quality and must be carefully cooked.

Boston Tripe.—One lb. honeycomb tripe, 1 egg, 2 tablespoons milk, 1 tablespoon of flour, ½ teaspoon salt, ¼ saltspoon pepper; beat egg, add flour, salt, pepper, milk. If the tripe has not been soaked over night in cold water, pour boiling water upon it, let cool and dry with towel. Lay the smooth side of it into the batter, then place it in spider in hot pork fat. Cook slowly until a delicate brown. Dip the remainder of the batter onto the honeycomb side, turn and cook in same way. Put on platter smooth side down. Serve immediately. This is an excellent receipt.

POULTRY AND GAME



HICKEN PIE.—To make a medium sized pie requires 1 good sized chicken, which should be carefully dressed, then boiled in water sufficient to cover it until thoroughly done. Add a little salt and a very little pepper. When so well done that the meat will slip from the bones, take the bird out of the kettle, remove the meat, break it into pieces as large as the two fingers. The kettle with the gravy has meanwhile been boiling, and should continue to boil until nearly all the water is absorbed.

When it begins to fry, which indicates that the water is boiled out, put the broken up chicken into the kettle and allow it to cook, watching it very closely that it does not burn, stirring frequently. In this way it gets the delicious browned taste that adds so much to this dish in any form. Prepare a crust in the same way as ordinary puff paste is made. Line a deep pan with the paste, break an egg into the dish and thoroughly wet the inside of the crust, place the chicken in, then put a top crust on, leaving a hole in the top so as to keep moist by adding liquor in which there is butter.

Deviled Chicken.—Prepare a mixture of mustard, pepper and salt, moistened with a little olive oil; put a small quantity of oil in the spider; add just onion enough to give it flavor, and toss the chicken about in this a moment; remove, rub and brush the mixture over the chicken and broil. Serve with a sharp, pungent sauce made of drawn butter, onion juice, mustard and chopped capers.

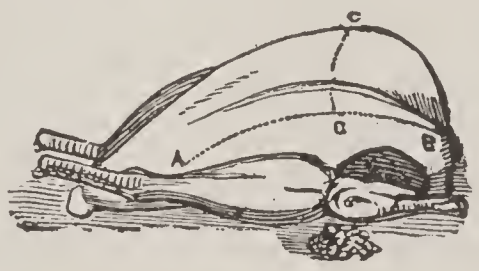
Brunswick Stew.—Boil chicken or squirrel with a little piece of salt bacon, add to it tomatoes, butter beans and green corn in time to be well cooked, a tablespoon butter and salt and pepper.

Roast Turkey or Chicken.—Pick and draw with care, then wash in a number of waters. Rinse out the inside with soda water. Wipe dry; make a dressing of bread-crumbs mixed with a little butter, seasoning, herbs, and hard-boiled eggs chopped fine. Stuff the inside of the fowl with this. Sew up with a strong thread; tie the neck to prevent the stuffing from squeezing out. Put in the oven with 1 or 2 cups water and a little salt in the pan, and baste often. Allow fifteen minutes to the pound if the fowl is old. If young ten will do. This rule allows for a brisk fire.

Do not let the skin get darker than a rich brown. If there is danger of its getting darker, lay a sheet of writing paper over the top. Chop the giblets fine, stew them in water enough to cover them, add them to the gravy of the fowl; thicken with a little flour beaten smooth in cold water. Boil up

together, and serve in a gravy-dish. The gravy may be seasoned with celery salt.

Dressing or Stuffing.—Stale bread sufficient to fill a 2 qt. baking-dish—half Graham and half white is best—soak till soft; add seasoning to suit the taste. Take a pound of nice beef-steak and cook it rarely, turning all the juice of the meat over the prepared dressing, chop the steaks fine and spread it evenly over the dish; cover closely and steam an hour.



ROAST FOWL.

The joint will usually separate by inserting the knife between the legs and side and pressing back the leg with the blade of the knife, if not, it can be easily severed by a touch of the knife. Next cut off the wing from D to B. Remove merry thought and side bones. Serve a slice of the white meat with some of the dark, to each guest, consulting preferences as far as possible.

How to Cook a Fowl.—Make a paste, by rubbing together cold, ⅔ each of a cup of butter and flour, and then stir this into about 3 qts. boiling water, so that a smooth gravy is formed. Carefully dress a fowl, removing all the pin feathers, stuffing it with any desired forcemeat, and trussing it in a short, compact shape. Simmer the fowl in this sauce, keeping it covered, for about 2½ hours, or until it is tender, and then remove the trussing cords and serve it, either with plain boiled or baked potatoes or with some dumplings made like biscuit dough and cooked with the fowl, for about 20 minutes. A lean poor bird will become plump and white under this treatment.

Chicken Pie.—Stew the chicken till tender, thicken the gravy a little, and add a little milk. Line a dish with a good rich crust, put in the chicken and gravy, season and cover with a crust. Bake from ½ to ¾ of an hour.

Broiled Chicken.—Prepare in the same way as for boilng, cut them in two through the back and flatten them; place on a cold gridiron over a nice red fire. After a little time, when they have become thoroughly hot, set them on a plate or other dish and lard them well with a piece of butter, pepper and salt them to taste, chiefly on the inside, then place them on the brander and continue turning till done—they will take fully 20 minutes. Serve hot, with a little butter and plenty of stewed mushrooms—a delightful dish.

Chicken Pie.—Cut the chickens in pieces and boil till tender. Thicken the gravy and season; then make a nice rich crust out of baking powder or soda biscuit dough, line the dish with this dough and lay in the chicken, taking care to have the bones all point toward the center, so that when it is cut you will not cut across a bone. Put in plenty of gravy and cover with a crust.

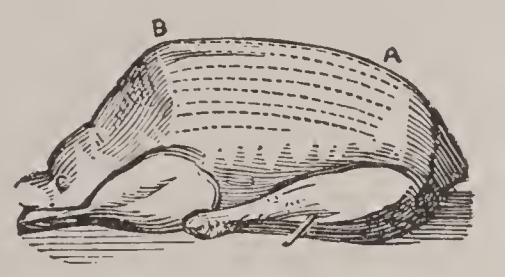
Chicken Pates.—Take cold chicken that has been cooked in any way, mince fine. Make a sauce of a cup of milk thickened with 1 teaspoon corn-starch or flour, add 1 tablespoon butter, seasoning to taste. Make a good puff-paste and line small pate-pans with it. Bake quick. Fill the crusts in the pan with the chicken compound and set in the oven to brown.

Chicken Cutlets.—Cut in as large pieces as possible the thick parts of 2 chickens, either cooked or uncooked. Dip in beaten egg and then in cracker or bread-crumbs, and fry to a light brown in butter. They should be served with a thickened and well-seasoned gravy made from the bones.

Boiled Fowl.—Having cleaned the fowl thoroughly, sew up in a coarse white cloth, plunge into a kettle of boiling water and boil slowly for an hour or more, according to age and toughness of fowl. Serve with celery, parsley, oyster sauce or simple white sauce, and garnish with slices of lemon.

To Curry Chicken.—Slice an onion and brown in a little butter, add a spoon of curry powder, allow it to remain covered for a few minutes to cook; add a little more butter and put in chicken, veal, etc., etc., cut up small, thicken with a little flour. This is excellent.

A turkey and goose are helped by cutting slices off the breast, and then the wings and legs are taken off. The breast is reckoned the best and the wing next in preference. Gentlemen are often partial to the drumstick, the slender part of the leg. A little of



BOILED TURKEY.

the stuffing is served with every portion of the bird. The drumstick is often reserved till the bird is cold and then grilled for breakfast. The rest must be carved as you would a fowl, dividing the breast, A to B, and cutting the back in two. Wild duck is helped in the same manner.

Mode of Broiling Chicken.—Dress the chicken, wash and dry with a towel. Heat the spider and place in it the chicken, skin down; add salt and pepper and a lump of butter on each half; cover with a tin and let it cook rather slowly midway or back of the middle if too hot. When thoroughly browned turn and cook in the same way until well done. This method prevents the burnt and underdone places in chicken broiled over coals. Garnish with parsley or cresses and a thin slice or two of lemon.

Boiled Fowl with Oysters.—One young fowl, 3 doz. oysters, yolks of 2 eggs, a gill of cream; truss as for boiling, fill inside with oysters bearded and washed in their own liquor; secure the ends of the fowl, put it into a tin boiler or saucepan and place the saucepan in a kettle of boiling water. Keep it boiling 1½ hours or rather longer, then take the gravy that has flowed from the oysters and fowl, of which there will be a good quantity, stir in the cream and yolks of eggs, add a few oysters scalded in their liquor; let the sauce get quite hot but do not allow it to boil, pour some of it over the fowl and the remainder send to the table in a gravy bowl. A trifle of powdered mace improves it.

Roast Duck.—Use ¾ onions and ¼ potatoes, chopped fine and highly seasoned, for the stuffing. Bind on the slices of salt pork and baste frequently while they are cooking in a moderately hot oven for about 2 hours.

All poultry is better to be drawn as soon as possible after killing, while the flavor will be much improved if it is filled with 3 or 4 onions cut in quarters, and the bird kept at an even temperature for a week before it is wanted for use. Wrap it up in a clean white cloth to exclude the air and keep it from freezing. The colder the better, provided it just escapes freezing. The continued change of temperature is what causes the change of flavor, while the presence of onions permeates the flesh, giving it an agrecable flavor which has not the slightest suspicion of garlic.

While the fowls are roasting it is well to add 2 or 3 onions in the side of the dripping pan, adding more if the bird is of extra size. Even people who have an obstinate prejudice against onions have been known to praise poultry and game prepared in this way, giv-

ing it the preference to the old-fashioned way of leaving out onions altogether.

A quart of oysters add very much to the stuffing of roast turkey, while the liquor is sufficient wetting for the amount of bread necessary.

Relish for Roast Duck.—Slice 6 oranges for 6 persons; grate the rind of 1 and add juice of 1 lemon, 3 tablespoons salad oil or melted butter, a pinch of cayenne pepper; mix and pour over the oranges.

Stewed Pigeons.—After preparing the birds, cut them up and let them lie in salt water for ½ an hour, then wash them well in clear water, place in saucepan with just enough water to cover them, cook till tender. Pour off some of the water and let them simmer quickly till dry; season with butter, salt and pepper to taste and serve with cream gravy.

Quail on Toast.—Wash the birds and wipe dry, split them down the back and broil over bright coals till done and browned lightly, turning often to prevent charring; season with butter, pepper and salt, lay on slices of buttered toast and serve immediately.

Roast Quail or Woodcock.—After drawing the birds, wash out thoroughly with a little borax or soda in the water, wipe dry with a soft cloth and rub salt and pepper well inside and out. Allow one small onion and one small potato for each bird, with a few bread crumbs; mince them and add half a teaspoon of sage, with a tablespoon of melted butter. Sew up the bird with fine cotton to prevent tearing when taken out. Cover the front and back with a slice of salt pork, tie up well with grocer's twine and place the birds in a frying-pan, which can be covered closely with an inverted pan.

Pour some boiling hot water over each bird and let them stew for about half an hour. Remove the cover after they are well steamed and allow them to brown nicely, giving them closer attention for another 30 minutes. Use a little flour in thickening the gravy, and send around green peas and currant jelly as a relish. Squabs are very fine eating when prepared in this way.

Quail on Toast.—Clean nicely, cut open down the back, season and dredge with flour. Crush them flat and put in a pan with butter and a little water. Cover and put in a hot oven till nearly done. Then fry in hot butter till brown. Toast slices of white bread, butter lightly and place the quails on the toast. Dish each separately; thicken the gravy in the pan with flour browned a little and pour over the quails and toast. Serve very hot. Delicious.

Pheasants, Partridges and Quails.—Clean and wash in several waters, putting a little soda in the last water, dry with a towel, stuff with dressing same as for chicken or turkey, sew up tight, tie down legs and wings; steam them over hot water for an hour or until done, then put them in a pan in the oven with a little butter and water. Baste frequently; they will brown nicely in 15 or 20 minutes; place them on a platter and garnish with parsley and jelly.

Pigeon Pie.—Prepare the pigeons as for roasting and put a lump of butter in each one; border a pudding dish with puff-paste, lay veal cutlet or a cut of tenderloin steak in the bottom of the dish. Place a layer of pigeons, breast downward, in the dish. Chop 5 hard-boiled eggs and cover the pigeons with them. Put in a little veal broth enriched with butter. Cover with a puff crust and bake slowly 1¼ hours.

Broiled Rabbit.—Broil slightly over the coals to give firmness to the flesh, then cover it with slices of fat pork from the neck to the legs. Then roast it for an hour. Remove

the flesh and cut it in strips. Afterward break the bones and cook them with some butter and flour, onions, salt, pepper and stock broth; boil them down to one-fourth, and having strained the gravy, put the slices into it and serve it up without again boiling it.

SAUCES FOR MEATS

FEW articles of cookery require more care in making than sauces. Most of them should be stirred constantly, and those containing eggs should never boil. The thickest stew-pans should be used for making sauces, and wooden or silver spoons for stirring them.

Colonel's Roast Beef Sauce.—One small teacup vinegar, 1 teaspoon sugar, 2 teaspoons mixed mustard, 1 tablespoon tomato catsup, 1 tablespoon Worcestershire sauce, 1 teaspoon salt, a little red pepper. Mix well.

Mayonaise Dressing.—One teaspoon salt, 1 teaspoon dry mustard, ⅓ teaspoon red pepper, yolks of 4 eggs, 3 tablespoons vinegar, 1 tablespoon lemon juice, 2 teacups olive oil.

Chili Sauce.—Nine large ripe tomatoes, 1 onion chopped fine, 4 hot peppers, 2 cups of vinegar, 1 tablespoon salt, 1 tablespoon sugar, 1 teaspoon ginger, 1 teaspoon cloves, 1 teaspoon allspice, 1 teaspoon cinnamon, 1 teaspoon nutmeg. Boil 1 hour.

Tomato Catsup.—Take the following ingredients: Eight qts. strained tomato juice, 6 tablespoons black pepper, the same quantity of salt, 4 tablespoons mustard, 1 tablespoon cloves, 1 qt. good vinegar, 1 cup brown sugar, 1 teaspoon red pepper and 1 grated nutmeg. This must be boiled slowly until it becomes thick.

Cucumber Catsup.—Pare cucumbers and cut them into pieces the size of a pear, lay in a bowl as follows: a layer of cucumbers, then a layer of salt, etc. Allow them to stand until following day; drain off water and season with celery seed, white and black mustard seed, unground black pepper and a little chopped onion. Fill bottles more than half full of the cucumbers, then fill them up with good vinegar.

Currant Sauce.—Five lbs. currants, 4 lbs. sugar, 1 pt. vinegar, 4 teaspoons cinnamon, 4 teaspoons cloves. Boil 3 hours; nice for meats.

Bread Sauce.—Cut a large onion in quarters and boil it in milk till tender; drain off the milk and pour it over grated bread crumbs; cover them up and let stand for about an hour, then put in a stewpan with a piece of butter the size of an egg mixed with a little flour; boil up together, add a little cream and serve. This sauce is excellent with roast shoulder of mutton.

Apple Sauce for Roast Goose.—Pare, core and slice some apples, stew till tender, and add a little butter and some brown sugar.

Celery Sauce.—Take ½ pt. boiling milk, 5 tablespoons butter, 1 tablespoon flour, stir together. Cut two heads of celery fine, boil five minutes; stir the celery into the prepared mixture and boil a few minutes. Very nice for boiled fowl.

Egg Sauce.—Take 5 tablespoons drawn butter, the yolks of 2 hard-boiled eggs mashed fine; seasoning, 4 tablespoons vinegar and 3 of salad oil, a little catsup if

desired; stir well and boil for a few minutes. This is a nice fish sauce.

Onion Sauce.—Boil the onions gently in milk and water till they are quite soft, then rub through a colander with a spoon, and boil them up with cream or the yolk of an egg beaten smooth with milk or melted butter.

White Sauce for Boiled Fowl.—Put the peel of a lemon cut very fine into a pint of cream, with a little thyme and seasoning to taste; simmer it gently for a few minutes, then strain and thicken it with 1 tablespoon flour beaten up with ¼ lb. butter, boil up and add the juice of the lemon and stir well. Mix the sauce with a little of the hot chicken gravy, but do not boil them together.

Lemon Sauce.—Cut thin slices of lemon into small pieces and put them in melted butter; let it just come to a boil and pour over the fowl.

Mint Sauce.—Chop mint leaves with a sharp knife, and do it quickly or they will turn black; add a little brown sugar and some good vinegar. This is very nice with roast lamb or mutton.

Horse-Radish Sauce.—Mix well together 1 oz. grated horse-radish, ½ oz. salt, 1 tablespoon made mustard, 3 tablespoons brown sugar, the same quantity of vinegar, and milk and cream to make it the consistency of thick cream.

Dutch Sauce for Meat or Fish.—Put 6 tablespoons water and 4 of vinegar into a stewpan, heat and thicken with the yolks of 2 eggs; make it quite hot, but do not boil; squeeze in the juice of ½ a lemon, and strain it through a sieve.

To Make Drawn Butter.—Put half a pint of milk in a perfectly clean stewpan and set over a moderate fire; put into a pint bowl a heaping tablespoon of wheat flour, ¼ lb. sweet butter and a saltspoon of salt; work these well together with the back of a spoon, then pour into it, stirring it all the time, half a pint of boiling water; when it is smooth, stir it into the boiling milk, let it simmer for five minutes or more and it is done.

Drawn butter made after this recipe will be found to be most excellent; it may be made less rich by using less butter.

Melted Butter.—Put into a stewpan 4 oz. butter, melt a little, then add 2 tablespoons flour and stir well together; pour in ½ pint hot water and boil a minute, stirring constantly and always in one direction. Milk used instead of water requires a little less butter and looks whiter.

Melted Butter.—Mix a large teaspoon flour smoothly with 1 cup cold water and a pinch of salt; put this in a stewpan and add 2 or 3 ozs. butter and stir constantly until it thickens, when it is done.

To Clarify Butter.—Simmer it gently over a clear fire, and when melted take it off, skim and let the sediment settle. Pour the butter off clear into jars for use and set in a cool place. Do this in the fall and it will keep all winter.

Curry Powder.—Two ozs. mustard, 2 of black pepper, 6 of coriander seed, 6 of tumeric, ½ oz. red pepper, 1 oz. cardamon, 1 oz. cummin seed and cinnamon. Pound fine, put in a bottle, cork and keep for seasoning gravies.

Boro-tartrate for Preserving Meat and Other Food.—Distilled water is aromatized with nutmeg in the proportion of 1 or 2 parts to 1000, and in this is dissolved 12 to 15 parts of boro-tartrate obtained by melting together 2 parts of tartaric acid with 15 of boracic acid. This antiseptic fluid is injected into the arteries of the animal to be preserved, which is then cut up, and the pieces, after the bones have been removed, are immersed in the fluid for several hours and then

dried in the air. Small pieces require to be immersed only for a short time, or their surface simply sponged with the fluid. This will be found an excellent preservative.

English Pickle for Meat.—Dissolve 300 parts of common salt, 5 parts of saltpetre and 50 parts of sugar in 2000 parts of water. Boil the whole and remove the scum.

VEGETABLES

VEGETABLES are a most useful accessory to our daily food, and their cookery should receive greater attention than it usually does. It is considered a very simple thing to boil a pot of potatoes, yet their palatableness and digestibility depend very largely on the way it is done. Nearly all vegetables are much better put into boiling water, as the fine flavor is thus retained in the vegetable instead of being soaked out in the water. Care should be taken not to overcook them; and when done they should be immediately prepared for the table and served at once, as they are spoiled by standing.

Scalloped Potatoes.—Four large, cold, boiled potatoes, peeled and sliced, 2 tablespoons butter, 1 pt. hot milk, 2 tablespoons flour. Melt butter and add hot milk and flour, when thick add salt, pepper and parsley. Put a layer of mixture in bottom of baking dish, then a layer of potato and so on, milk coming last. Cover with cracker crumbs and bake 15 minutes.

Potatoes a la Creme.—Put into a saucepan 3 tablespoons butter, a small handful of parsley chopped fine, salt and pepper to taste. Stir up well until hot, add a small teacup cream or rich milk, thicken with 2 teaspoons flour and stir until it boils. Chop some cold, boiled potatoes, put into the mixture and boil up once before serving.

Potatoes in Cases.—Bake potatoes of equal size, when done and still hot cut off a small piece from each potato, scoop out carefully the inside, leaving the skin unbroken, mash the potato well, seasoning it with plenty of butter, pepper, salt and grated cheese; return it to potato skin with a spoon, allowing it to protrude about an inch above the skin. Leave the tops rough and return to oven to brown.

Candied Potatoes.—Boil 3 large sweet potatoes until tender, slice and place in shallow baking dish, in layers, with sugar and butter liberally sprinkled between. Cover the top with sugar, then pour a teacup of boiling water thereon and set inside the oven to brown.

Candied Sweet Potatoes.—Boil 6 small-sized sweet potatoes, peel them and lay on a shallow plate or pan. Put a teaspoon butter on each potato, sprinkle on them ½ cup of brown sugar, 2 tablespoons of water in pan, cook slowly and baste as you would meat. Cinnamon, cloves, nutmeg and lemon peel improve the flavor.

Macaroni.—Boil macaroni until tender, drain and place in dish alternate layers of macaroni and cheese, allowing plenty of the latter; season with salt; prepare a custard as for custard pie, omitting the sugar, pour this over the macaroni, bake in a slow oven.

Potato Chips.—Pare the potatoes, shave them very thin, soak for ½ hour in ice-cold salted water, drain in a colander and spread

upon a dry towel; fry a few at a time in very hot fat, 1 minute being sufficient to cook and brown them properly, sprinkly lightly with salt, and when needed at table heat quickly in the oven.

Sweet Potato Pone.—One quart sweet potatoes peeled and grated; pour over the grated potato 1 pt. boiling water, stir it well; add 1 teacup brown sugar, 2 teacups molosses, 2 tablespoons butter, 1 heaping tablespoon powdered ginger, 1 teacup milk; pour into a baking dish and bake slowly for about 2 hours.

Green Corn Oysters.—One pint grated green corn, 1 tablespoon flour, 2 eggs, piece of butter the size of half an egg, a pinch of salt. Mix well and fry like pancakes.

Boston Baked Beans.—These require a covered stone bean-pot. One qt. dry beans makes enough for a family of 6 or 7 persons. The beans should be looked over carefully and put to soak in plenty of soft water over night; skim them out of the water in the morning and put on cold fresh water enough to cover them when they have boiled; put them in the bean-pot in the same water. Add 1 tablespoon molasses and a piece of corned beef, about ½ lb., with considerable fat on it (we much prefer this to pork) and a very little salt.

It is best to taste them when about half done, and if they are not salt enough add what more salt is needed. A little experience will soon teach one just how to season them. Bake 3 or 4 hours in a moderate oven, and see that there is water enough kept in them, by adding as it cooks out. There should always be water enough so you can see it by tipping the pot up sidewise.

Green Tomatoes and Onions,—Slice green tomatoes without peeling, put into a hot skillet which has been buttered, add a layer of sliced onions, then tomatoes, etc., until the dish is filled. When all is cooked tender turn into a hot dish and serve. This is especially nice for lunch in the fall.

Fried Tomatoes.—Slice large tomatoes into three slices, rub with flour, fry in hot butter, browning on both sides. Dress with a sauce made of cream, butter and seasoning. Serve hot.

Tomato Toast.—Proceed as for stewed tomatoes, then run them through a colander, add a cup of cream and serve on toast.

Tomato Relish.—One doz ripe tomatoes, 3 onions, 2 small green peppers, 3 tablespoons sugar, ⅔ cup of vinegar, 1 tablespoon salt, boil gently 1 hour.

Tomato Sauce.—Slice 2 large onion and boil until well done; add 1 can tomatoes, 3 tablespoons sugar, pepper and salt to taste; cook well for 20 minutes, then strain; after straining let it come to a boil and add 1 teaspoon corn starch wet with a little water, also a piece of butter the size of a walnut.

Boiling Cabbage, to Keep Green.—Put 4 qts. hard water in a kettle and let it boil. Cut a good-sized cabbage into 2 or 4 pieces, cut out the core, wash in clean cold water, then put in kettle of boiling water. Stir it down, put lid on till it boils fast, then take off the lid. Stir it occasionally till done, which will be in about 20 minutes. Strain in a colander. By so doing you will have a nice green cabbage.

Asparagus.—Cut off the hard ends and tie in bunches, put into boiling water with a little salt and boil till tender. Mix together flour and butter in equal parts, beat to a cream, stir in hot water off the asparagus to make a sauce, boil together. Lay the asparagus on slices of toasted bread; pour the sauce over all and serve hot. The asparagus may be dressed in the same manner without the toast, or may be dressed with seasoning only if preferred.

Cauliflower.—Trim off the green leaves and soak an hour in cold water; tie in a coarse white cloth and plunge into a kettle of boiling water, with a little salt; cook about ½ hour or till tender. It is very nice served with either sweet cream or melted butter.

Cauliflower Fried.—Soak a cauliflower in cold water for an hour, then boil in milk and water till tender, divide into small branches and set away to cool. Make a batter in the proportion of 1 tablespoon flour and 2 tablespoons milk to 1 egg. Heat some fresh butter in a frying pan, dip each branch in the batter and fry a light brown.

Cauliflower Omelet.—Chop cold cauliflower very fine and mix it with a sufficient quantity of beaten egg to make a stiff batter, then fry it in fresh butter and serve very hot.

Stewed Celery.—Wash 4 heads and take off the green leaves. Cut into pieces 3 or 4 in. long, put into a stew-pan with ½ pint of meat broth, stew till tender. Add a little cream and seasoning, also a little flour and butter, and simmer together.

Sauerkraut.—Slice or chop the cabbage. Put a layer of salt on the bottom of a barrel or tub, then a layer of cabbage, and so on until the barrel is full. As each layer is put in it should be pounded. The top layer should be salt. When the barrel is full it should be covered with a cloth and a board to fit the barrel and a heavy weight on top. At the end of a few days it will begin to ferment. After it does, wash the cloth on the top every day until it begins to be clear. The crout will be ready for use in about 4 weeks. Be sure to have a tight-fitting cover, so as to exclude the air.

Stuffed Tomatoes.—Select large-sized, smooth and round tomatoes. Cut from the stem end a slice and lay aside; scoop all the inside of tomato out, being careful not to break through, add half as much cracker or bread crumbs, season highly with salt and pepper, add plenty of butter, a dash or two of cayenne, put on the stove, cook 10 minutes. Now fill the hollow tomatoes with this dressing; when full add 4 or 6 whole cloves, putting them on top of the dressing—either pile up high or make level and put on the sliced top; place tomatoes in a large baking-pan, with a little hot water to prevent sticking, and bake 15 minutes.

SALADS



CABBAGE SLAW.—Heat 1 cup vinegar, yolk of 1 egg mixed with 1 tablespoon mustard, 2 tablespoons sugar and a lump of butter the size of an egg, rolled in flour; cook a few minutes and pour over the cabbage, which must be cut up not too fine, with salt sprinkled over it.

Celery Salad.—One qt. chopped celery, ½ pt. almonds, browned in butter and salted, add mayonaise dressing. Serve on lettuce leaves.

Potato Salad.—Take ½ cup vinegar, ½ tablespoon mustard and 1 tablespoon butter, let them boil and then add 2 eggs beaten with ¼ cup sugar, stir till it thickens; when cold add ½ cup sweet cream; boil 6 fair-sized potatoes till tender, not mealy, and when cold cut in cubes and salt and turn the dressing over them, and over the top lay sliced hard-boiled eggs.

Cold Slaw.—One-half pint rich milk or cream, ½ pt. good vinegar, 1 small cup sugar, 3 eggs well beaten, a lump of butter size of an egg, 1 heaping teaspoon ground mustard, the same of celery seed, pepper and salt. Cook all together until the mixture thickens. When cool pour over cabbage cut very fine.

Boiled Salad Dressing.—Three well-beaten eggs, 6 tablespoons vinegar, 1 tablespoon butter, 1 even teaspoon pepper (white pepper preferred), 1 teaspoon mustard, 2 teaspoons salt, ½ cup cup of cream whipped to a froth. Put the vinegar on to boil, when boiling add the beaten eggs and cook till thickened, stirring all the time; when thick and smooth remove from the stove and add the butter. Work the pepper and mustard into the salt (dry to prevent lumping when added to the dressing), add the salt, pepper and mustard and put away into a cool place.

When wanted for a salad add the whipped cream and a couple of tablespoons of salad oil if desired. For potato salad, add some finely minced parsley and onions. For chicken salad, use celery cut fine with a knife, not chopped. For any fish salad, always use salad oil in the above dressing. For celery salad, use as above. For cabbage salad, omit the mustard and add a little sugar.

Chicken Salad.—To 1 pair of chickens boiled and cut in small pieces add celery about same quantity as chicken, 2 small tablespoons salt, yolks of 4 hard boiled eggs, ½ pt. vinegar, ½ teaspoon cayenne pepper (be careful with this), 3 small tablespoons mustard, ½ pt. sweet cream, 1 tablespoon flour, ½ pt. oil (chicken oil, butter and salad oil mixed together to make ½ pt.), yolks of 4 raw eggs. Put all together and let cook, thicken but not boil, then after corking well pour over chicken and celery. *Very fine.*

Fruit Salad.—One box gelatine soaked in 1 pt. cold water until dissolved, 3 cups sugar, 1 qt. boiling water, boil 10 minutes, flavor with the juice of 2 lemons and a can of pineapple juice, strain and let cool; then stir in 1 can of pineapple cut in small squares, 2 oranges cut small, 2 bananas cut small. Put into moulds and cool.

Sardine Salad.—Remove oil and outside skin from three boxes of imported sardines, take out as much bone as possible, cut fine, enough pickle to season, 4 hard boiled eggs and mix with sardines.

Dressing for Same.—One cup vinegar, 1 tablespoon sugar, 1 teaspoon salt, 1 teaspoon each of mustard and pepper and 1 egg well beaten. Let boil until thick, constantly stirring, and when cold pour over the sardines, then garnish with celery.

Banana Salad.—Cut in slices lengthwise as thick as a dollar, arrange so the slices will form a semi-circle and form a hollow center, pour over them 1 gill grape juice, sweet with sugar, into which you have put 1 teaspoon lemon juice. Let them get ice-cold, then fill center with whipped cream piled high.

Beet Salad.—One quart raw cabbage chopped fine, 1 pt. boiled beets chopped fine, 1½ cups granulated sugar, 1 tablespoon salt, 1 teaspoon pepper, 1 teacup horse-radish grated. Cover with cold vinegar and keep from the air.

Cucumber Salad.—Take 2 dozen small cucumbers sliced thin, leaving rind, and salt well; let stand 3 hours, add one-quarter as many onions as cucumbers, let stand three hours, drain off liquor and mix well with the following salad dressing: ½ cup sweet oil, ½ cup white mustard seed, ½ cup black mustard seed, 1 tablespoon celery seed, 1 qt. cider vinegar.

Lobster Salad.—Cut the meat of the lobster into small pieces or dice, make nests

of three or four small crisp lettuce leaves and put one large spoonful of lobster in each one. Put a spoonful of salad dressing in each, or serve separately in a small pitcher or bowl.

Salmon Salad.—One cup canned salmon, 1 cup crackers broke fine, 1 large onion chopped fine, salt and pepper to taste. Moisten well with vinegar and serve.

Tomato Salad.—Scald and peel the tomatoes, then put on a dish a layer of sliced tomatoes and a layer of chopped celery until the dish is full; pour over all a French dressing of 1 tablespoon vinegar, 3 tablespoons olive oil, 1 saltspoon pepper and saltspoon salt; add a little cayenne if liked.

Veal Salad.—Boil till tender, chop fine and proceed as in the above recipe. Garnish with sliced lemons.

Orange Salad.—One tablespoon vinegar, ½ teacup water, 1 teaspoon powdered sugar, a pinch of salt, a pinch of mustard, ½ teaspoon butter, yolks of 5 eggs. Mix sugar, butter, salt, pepper, mustard and vinegar, put on stove and heat through. Beat yolks light and stir in hot mixture on the stove, beat fast until it gets thick. Peel and remove the seeds from oranges, break into pieces and pour mixture over them just before serving.

Salad Dressing.—Beat the yolks of 2 eggs to a cream, add 1 tablespoon sugar, a generous pinch of red pepper and scant teaspoon mustard. Beat together and add ½ teacup vinegar, steam until it thickens, stirring all the time; add a pinch of celery seed. Just before using add 2 tablespoons thick cream. Do not dress salad until ready for use.

Bread, Biscuit, Rolls, Cake, Etc.

YEAST.—Twelve large potatoes, ½ cup of sugar, 2 yeast cakes, ⅓ cup of salt, handful of hops. Boil potatoes, strain water off and set aside to cool. Mash potatoes to cream, add sugar and salt. Boil hops five minutes, when cool strain the water into the yeast, soak yeast cakes in tepid water, add when potatoes are cool, set over night to rise.

Potato Yeast.—Pare and grate 4 large raw potatoes, pour over them 1 qt. boiling water and set on the stove until it thickens; let it cool and then add 1 cup of well-raised sweet yeast and set it in a warm place to rise; when quite light add 1 cup of sugar and ½ cup of salt. This will keep 2 or 3 weeks in a cool place.

Hop Yeast.—To a handful of hops take 3 pints of water and boil 15 minutes; add 1 tablespoon salt. Strain the liquor, and while boiling pour over a handful of flour. Soak one yeast cake in a cup of lukewarm water until soft. After the liquor has become lukewarm add the yeast and set aside to rise. After it has risen work in enough meal to make it stiff; roll, cut into cakes and set to dry.

Yeast That Will Keep All Summer.—Pare and grate 12 large potatoes, add 1 teacup sugar and ½ cup salt. Boil 2 handfuls of hops in 1 gallon of water five minutes, and strain onto the other ingredients. Put the mixture into a tin pail and set in a kettle of boiling water and stir till it thickens. When cool add 1 pt. of good sweet yeast or

4 fresh yeast cakes. Stir well, cover up tight and set in a warm place to rise. When light put into a stone or glass jar and set in a cool place in the cellar. Use ½ cup of this yeast for two loaves of bread.

Apple Yeast.—Six large apples, 1 pint flour, 1 pt. cornmeal, 1 cup sugar, ½ cup salt, 1 pt. hops, 1 gal. water. Simmer apples, hops and water 1 hour, mash through a sieve, add other ingredients and let cool, then add 1 cup of yeast. Keep in a cool place and use as other yeast.

The Very Best Baking Powder.—Get ½ lb. bicarbonate of soda, 1 lb of pure cream of tartar and 1 oz. corn starch. Sift 2 or 3 times. Use about 1 tablespoon for each lb. of flour.

French Biscuit.—Beat together 1 cup of sugar, 1 egg, 1 cup of butter and ½ cup of sour milk. Put in ½ teaspoon soda. Use flour enough to mold. Roll on a board, cut into biscuits and bake in a quick oven.

Quick Soda Biscuit.—Rub 1 teaspoon of soda and 2 teaspoons of cream tartar into 1 qt. flour. Then rub into the flour 2 tablespoons butter. Pour in ½ pt. sweet milk or cold water, add a little salt. Work the dough into shape as quickly as possible. It should be soft as you can handle. Roll and cut into biscuits ½ inch thick and bake in a quick oven. They are delicious—light, flaky and white. Three teaspoons baking powder may be substituted for the soda and cream tartar.

Breakfast Biscuit.—Take 1 qt. sweet milk, ½ cup melted butter, a little salt, 2 tablespoons Royal Baking Powder, flour enough to make a stiff batter; do not knead into dough, but drop in buttered tins from a spoon. Bake in a hot oven—unless it is hot they will not be light and tender.

Cream Biscuit.—Take ½ cup of sour cream, 1 pt. sweet milk, 2 teaspoons cream tartar, 1 of soda and a little salt. Mix with sufficient flour to mold out smoothly, and bake in a quick oven.

Graham Biscuit.—Take 1 pt. of Graham flour, 1 cup of white flour, 2 tablespoons of butter, 2 heaping teaspoons cream tartar, 1 of soda, a little salt. Mix with sweet milk or water and bake in a quick oven.

Rye Biscuit.—Take ½ pt. rye meal, 1½ cups wheat flour, 4 tablespoons molasses, 1 egg, a pinch of salt, ½ pt. sour milk and 2 scant teaspoons soda. Bake quick.

Lemon Biscuit.—Take 1 cup butter, 2½ cups sugar, 4 eggs, 1½ pts. flour, 1 teaspoon baking powder, 1 teaspoon extract lemon. Mix the butter, sugar and beaten eggs smooth, add the flour, sifted with the powder and the extract. Flour the board, roll out dough ¼ in. thick, and cut out with large, round cutter; lay out on a greased tin, wash over with milk and lay a thin slice of citron on each. Bake in hot oven 10 minutes.

Graham Gems.—Take 1 pt. sweet milk, ½ cup sugar, 1 teaspoon cream tartar, ½ teaspoon soda. Mix with Graham flour to a stiff batter. Drop into gem-pans and bake quickly.

Wheat Gems.—Two cups milk, 2 cups flour, 2 tablespoons melted butter, 2 eggs beaten separately, ¼ teaspoon baking soda. Have gem-pans very hot and bake in quick oven.

Rye Gems.—One cup of rye flour, ⅔ cup Graham or white flour, ½ cup molasses, 1 cup or a little more sour milk, 1 teaspoon soda dissolved in the milk, small piece of melted butter, a little salt. Have the pans warm.

Light Rolls.—When making light bread save enough for 2 loaves, add to it the white of 1 egg and about 2 tablespoons of butter. Mix well, roll out on a board and cut with a biscuit cutter; then grease the top, fold over and flatten a little with the hand. Put in a

warm place to rise, and when light bake in a moderate oven.

Bakers' Rolls.—Take 2 lbs. light dough, add 2 or 3 ozs. butter, 1 tablespoon sugar, 1 egg and flour enough to knead into a smooth dough. Put in a warm place to rise, and when they are light cut into pieces about the size of a small egg and mold up round with the hands; let them stand for 10 minutes, grease the tops, then with a small round stick or roll press in center of each roll quite hard; fold one side over the other, then press a little with the hands. Put on a tin in rows, let them rise and bake 15 minutes in a medium oven.

French Rolls.—Take 1 qt. flour, ½ cup hop yeast, ½ teacup butter and water enough to wet. Mix well and let it rise over night. Roll out thin and cut in squares. Butter each and roll up. Set to rise. When light bake in a moderate oven for ½ hour. They are very nice.

New England Rolls.—Take about 4 lbs. flour, rub into it 3 oz. butter, make a hole in the flour and add 1 pt. cold milk, 1 gill yeast, 3 oz. sugar, 1 egg and a little salt. Let this rise over night, then mix and let stand till noon; make into rolls, let them get light and bake in a rather hot oven.

Plain Muffins.—Take 2 lbs. raised dough, rub in ¼ lb. butter, melted; then add ½ cup milk, 1 whole egg and 4 yolks, a little sugar, a little salt and ¼ lb. flour. Beat well, till the batter is smooth, and let it rise for awhile; then set the muffin-rings on a buttered baking-pan, grease the rings and half fill them. Let rise ½ hour and bake in a hot oven.

London Crumpets.—Take 1½ lbs. flour, 1 qt. warm water, a cup of yeast, 1 tablespoon melted butter and 1 of syrup, 1 teaspoon salt, mix all together. Set at night, or 6 hours before baking. Beat well.

Corn Meal Muffins.—Take 1½ cups of corn meal, 2 teaspoons baking powder, 1½ cups flour, 1 tablespoon sugar, ½ teaspoon salt, tablespoon melted butter, 2 eggs, milk to make stiff batter.

Sponge Cake.—Ten eggs, ½ lb. flour, 1 lb. pulverized sugar, 1 lemon, 1 small teaspoon salt. Beat yolks separately and thoroughly, add sugar and beat hard, add salt, lemon juice and grated peel. Beat whites to stiffness and add to the yolks, beating well together. Then cut the flour in slowly with a large knife and avoid beating after this. Bake in two deep, long, narrow pans, in slow oven, which is hot on the bottom. The secret of success is in the baking and in not beating the flour into the eggs.

Old-Fashioned Plum Cake.—Three coffee cups sugar (soft brown the best), ½ cup butter, 3 eggs, 2 cups sour milk, 2 teaspoons soda, a little salt, flour enough to make it as stiff as pound cake, cloves, cinnamon and nutmeg to taste, 1 lb. raisins, 1 cup currants, ¼ lb. citron, juice of 1 orange. This makes a very large cake; one-half the rule fills an ordinary pan.

A Table of Weights and Measures.—Three level coffeecups sifted flour equal 1 lb.; 2 level coffeecups pulverized sugar equal 1 lb.; 1½ level coffeecups granulated sugar equal 1 lb.; 1¾ level coffeecups A sugar equal 1 lb.; 4 scant teacups sifted flour equal 1 lb.; 2 scant teacups soft butter, packed, equal 1 lb.; 2 scant teacups granulated sugar equal 1 lb.; 2¼ scant teacups brown sugar equal 1 lb.

Fruit Cake.—One qt. flour, finely sifted, 1 qt. brown sugar, 2 cups butter, 12 eggs beaten separately, 2 lbs. raisins, 2 lbs. currants, ½ lb. citron, 2 lbs. blanched almonds, 1 cup molasses, 1 cup brandy or wine, 1 teaspoon ground cloves, 1 teaspoon allspice, 1 teaspoon nutmeg, 1 tablespoon cinnamon,

1 tablespoon ginger, 1 tablespoon soda dissolved in water, about ¼ cup water. Bake 3 hours.

Huckleberry Cakes.—Mix butter the size of an egg with 2 heaping tablespoons sugar; add 2 well beaten eggs, a little salt, 1 cup milk, 2 heaping cups flour, 1 teaspoon cream tartar in the flour, 1 cup berries. When using berries have the batter a little stiff. Lastly add ½ teaspoon soda in a little warm water. Bake immediately in small tins.

Angels' Food.—Whites of 12 eggs beaten stiff, 1½ tumblers of granulated sugar, 1 tumbler of flour, 2 teaspoons cream tartar, 1½ teaspoons baking powder; sift flour with cream tartar and baking powder four times. Add sugar to eggs and beat until very light. Stir in flour, a little at a time, and bake in a loaf.

Empress Cake.—Two cups bar sugar sifted, ¾ cup butter, ½ cup sweet milk, 2 cups sifted flour, 5 eggs beaten separately, 2 level teaspoons baking powder, 1 tablespoon brandy, 1 tablespoon flavoring. Bake in slow oven and do not open oven door for 15 minutes.

Ice Cream Cake.—One-half cup butter, ½ cup sugar, ½ cup milk, 2 cups flour, 3 eggs, 1 teaspoon cream tartar, ½ teaspoon soda. Beat the whites separately.

White Cake.—One goblet butter, 2 goblets sugar, 3 goblets flour, 1 teaspoon baking powder, the whites of 15 eggs; 8, 10 or 12 eggs will answer, the larger quantity makes the nicer cake.

White Cup Cake.—Take 1½ cups sugar, 1 cup butter, whites of 8 eggs, 1 cup sweet milk, 1 cup corn starch, 1½ cups flour, 2 teaspoons baking powder. Flavor with rose water.

Gold Cake.—After beating to a cream 1½ cups butter and 2 cups white sugar, stir in the well-whipped yolks of 12 eggs, 4 cups sifted flour, 1 teaspoon baking powder, flavor with lemon. Line pan with butter and paper; bake in a moderate oven 1 hour.

Silver Cake.—Seven eggs, 2 cups powdered sugar, ⅔ cup butter, 2 teaspoons baking powder, 1 teaspoon cream tartar, ½ teaspoon soda, 3 cups flour, 1 teaspoon vanilla or 4 drops of almond essence. Bake in a loaf for ½ hour.

Caramel Cake.—One cup butter, 2 cups sugar, a scant cup milk, 1½ cups flour, 1 cup corn starch, whites of 7 eggs, 3 teaspoons baking powder in the flour, bake in a long pan. Take ½ lb. brown sugar, scant ¼ lb. chocolate, ½ cup milk, butter size of an egg, 2 teaspoons vanilla; mix thoroughly and cook as syrup until stiff enough to spread; spread on cake and set in the oven to dry.

Velvet Cake.—Two cups sugar, 4 cups flour, 1 cup butter, 1 cup cold water, 4 eggs, ½ teaspoon soda, 1 teaspoon cream tartar. Beat the butter and sugar to a cream, dissolve the soda in water, mix cream tartar in flour, beat the eggs separately, then add other ingredients. Flavor with 1 tablespoon lemon or almond. Bake 1 hour in a moderate oven. This quantity makes 2 loaves.

Zimmekuken (German Coffee Cake).—One pt. raised dough, 1 heaping cup white sugar, ½ cup butter, 2 tablespoons sweet cream, 3 eggs, 1 cup currants or raisins, a little cinnamon. Beat all together hard. Put in 1 long pan or 2 short ones, raise about 20 minutes, then sprinkle sugar and cinnamon on top, bake ½ hour. Very nice with coffee in the morning.

Cream Cake.—One cup sugar, 1 egg in a cup, fill it up with cream, 1½ cups flour, 2 teaspoons baking powder. Stir quickly and bake.

Elba Cake.—Cream together 2 cups

sugar and ½ cup butter, add the whites of 4 eggs beaten to a froth and beat thoroughly; 3 cups flour, 3 teaspoons baking powder, 1 cup milk, flavor to taste.

Loaf Cake.—Three eggs, 2 cups sugar, 1 cup butter, 3 cups flour, 1 cup sweet milk, 2 teaspoons baking powder.

Coffee Cake.—One egg, 1 cup sugar, ½ cup butter, ½ cup molasses, 1 teaspoon soda, 1 cup flour, 1 cup coffee, 1 cup raisins, spices.

Blackberry Cake.—Three eggs, ¾ cup butter, 1 cup brown sugar, 3 tablespoons milk (sweet or sour), 1½ cups flour, 1 cup blackberry jam, 1 teaspoon soda. Bake in a square tin and frost the top. Very nice.

Nut Cake.—Two cups sugar, 1 cup butter, 3 cups flour, 1 cup milk, 4 eggs, 2 teaspoons baking powder, 1 cup nut meats cut fine (hickory nuts are very nice), ½ teaspoon extract almond.

Strawberry Short-cake.—Make a rule of baking powder biscuit, with the exception of a little more shortening; divide the dough in half; lay one-half on the moulding board (half the dough makes one short-cake), divide this half again and roll each piece large enough to cover a biscuit tin or a large sized pie tin; spread soft butter over the lower one, and place the other on top of that; proceed with the other lump of dough the same, by cutting it in halves and putting on another tin. Set them in the oven; when sufficiently baked take them out, separate each one by running a large knife through where the cold soft butter was spread. Then butter plentifully each crust, lay the bottom of each on earthen platters or dining plates; cover thickly with a quart of strawberries that have been previously prepared with sugar, lay the top crusts on the fruit. If there is any juice left, pour it around the cake. This makes a delicious short-cake.

Peaches, raspberries, blackberries and huckleberries can be substituted for strawberries. Always send to the table with a pitcher of sweet cream.

RECEIPTS FOR Renovating Clothing

To Wash Satin, Silk Ribbons, Brocade and Silk Damask.—Rub the materials to be cleaned either with yolk of egg or Venetian soap, wash them in tepid water, then rinse and dry. Now dissolve good gum-tragacanth in equal parts of wine-vinegar and spring water, and strain the solution through a cloth; it should not be too thick. Dip the fabric in this solution so that it is uniformly moistened, then squeeze out the gum water, and by means of a brush spread the fabric upon a smooth board and let it dry quickly in the sun or near the stove. But ribbons should be ironed dry.

To Wash Silk Ribbons Mixed with Gold and Silver Threads.—Before washing brush the ribbons with honey water to protect the colors. Then wash in a solution of beef's gall and soap; manipulate the ribbon with one hand while pouring rain water over it with the other hand. After washing dip them in clear gum water, wrap them

between two cloths around a mangle roller, and mangle them for a short time; then fasten some weight to one end of the ribbons and hang them up to dry.

To Remove Grease from Silk.—Lay the silk on a table on a clean white cloth. Cover the damage thickly with powdered French chalk. On this lay a sheet of blotting paper and on the top a hot iron. If the grease does not disappear at once, repeat the process.

To Remove Port Wine Stains.—If a glass of port wine is spilt on a dress or table-cloth, immediately dash all over it a glass of sherry. Rub vigorously with dry soft cloths. No stains will be left.

To Clean Ladies' Kid Boots.—Dip a rag in almond oil and remove all the mud from the boot, a piece at a time, drying as you go, and never leaving the leather moist. Polish with clean rag and more oil. If you dislike the dulness this process leaves, when quite dry polish with the palm of the hand. Kid is thus both cleaned and preserved.

To Clean Colored Fabrics.—Nearly all colored fabrics stain the lather used to clean them, and that without losing their own brightness in any way. No article of a different color must be plunged into a wash or rinse so stained, but must have fresh ones; and no colored article must be rinsed in a blued lather. Scarlet is particularly prone to color a wash.

Different colors are improved by different substances being used in the wash or rinse; sugar of lead has the credit of fixing all colors when first cleaned, and may be used to those likely to run. To brighten colors, mix some ox-gall, say two pennyworth; but of course the quantity must be regulated by the quantity of suds in the wash and rinse. For buff and cream-colored alpaca or cashmere, mix in the wash and rinse two pennyworth of friar's balsam for one skirt. For black materials, for one dress, two pennyworth of ammonia in the wash and rinse. For violet, ammonia or a small quantity of soda in the rinsing water. There are some violets and mauves that fade in soda. For green, vinegar in the rinse, in the proportion of two tablespoonfuls of vinegar to a quart of rinse. For blue, to one dress, a good handful of common salt in the rinse. For brown and gray, ox-gall. For white, blue the water with laundry blue.

Dresses, mantles, shawls, opera-cloaks, under-skirts, waists, etc., of all sorts (the latter and such small articles need not be unpicked if the trimming is removed), articles embroidered with silk, self-colored or chintz-colored, damask curtaining, moreen and other woollen curtaining, may all be cleansed as specified so far.

Blankets should be cleaned in the same way. Pull them out well, whilst wet, at both sides and both ends, between two persons. When half dry it is a good plan to take them off the line and pull them again; when quite dry, just give them a little more pulling out. This keeps them open and soft. Blankets are not blued so much as flannels, presently described. Never use soda to them, and never rinse them in plain water or rub on soap.

The dyers and cleaners have a mode of pressing articles which gives to many of them, such as damask and moreen curtaining and Paisley shawls, a superior appearance to anything that can be achieved at home; but some of them will press articles at a fixed price for persons cleaning them at home.

Worsted braids and fancy trimmings can be cleaned the same way.

Muslin dresses, even of the most delicate colors, can be cleaned in ten minutes or a quarter of an hour, without losing their color.

Melt half a pound of soap in a gallon of water, empty it in a washing tub, place near two other large tubs of clean water, and stir into it one quart of bran. Put the muslin in the soap, turn it over and knead it for a few minutes; squeeze it out well, but do not wring it lest it get torn; rinse it about quickly in the bran for a couple of minutes. Rinse again well for a couple of minutes in clean water. Squeeze out dry and hang it between two lines. A clear dry day should be chosen to wash muslin dresses; half a dozen may be done in this way in half an hour. The last rinse may be prepared the same way as the rinses for woollen fabrics. A colored pattern on a white ground must not be blued. The bran may here be dispensed with.

When the dress is dry make the starch; for a colored muslin, white starch, and unboiled, but made with boiling water, is best for muslin dresses. Stir the starch with the end of a wax candle. Dip the dress. Hang it again to dry. When dry, rinse it quickly and thoroughly in clear water. Hang it to dry again. Sprinkle and roll it up; afterwards iron it with very hot irons. Hot irons keep the starch stiff. This rinsing after starching is called clear-starching; none of the stiffness but much of the unsightliness of the starch is removed in this way.

All kinds of white muslins, lace curtains, cravats, etc., may be washed in a thick lye of soap, as described, well rinsed, blued and starched, like the muslin dresses above named. Use blue starch to white. White muslin waists should be very slightly blued, and the same may be observed of book-muslin dresses and cravats, as blue-looking muslin is very unbecoming to the complexion; a slight creamy tinge is preferable.

Morning cambric dresses may be washed the same way as muslin dresses; but they do not generally clean quite so readily, and perhaps may need rubbing a little in places that are soiled.

The advantage of thus cleaning dresses instead of washing them is, first, if colored, the process is so rapid that there is not time for the colors to run. Secondly, the fabric is not rubbed, and therefore not strained and worn out. Thirdly, the process saves nearly all labor, and is so quickly done that any lady may manage it for herself in the absence of a laundry maid or a lady's maid.

Many ladies make a strong solution of sugar of lead—some put two pennyworth in enough cold water for one dress; stir it well when dissolved, and let the dress, muslin or cotton, soak a couple of hours to set the colors before washing it the first time. It does not need to be repeated. Those using sugar of lead should be careful not to do so if they have any scratches, abrasions or wounds about their hands.

Chintz may be cleaned in the same way as muslin and print dresses.

To Clean Black Silk with Very Little Trouble and Expense.—Take entirely to pieces the dress, jacket, etc., and well shake each piece; then spread over a table a newspaper, or sheet of clean paper, and on it lay a breadth of the silk. Brush it well both sides with a fine soft brush—a hat brush would very well answer the purpose. Shake it again; fold together in half, and place it on one side of the table. In the same manner shake, brush and shake again each piece of the silk. Remove the paper and place on the table a clean newspaper or sheet of paper. Newspapers answer best; they are large and smooth, and probably at hand. On the paper again place a breadth of the silk, and into a clean quart pudding-basin pour a half pint of cold water, adding half a pint of good sweetened gin, which is better for the pur-

pose than unsweetened, as the sugar stiffens the silk. These are the proportions for any quantity required.

Have ready a piece of black crape or black merino about half a yard square; dip it well into the liquid, and thoroughly wash over the *best* side of the silk. Be careful that it is well cleaned, and if possible wash it from edge to edge and wet it well all over. Then fold over the silk in half; then again, till the folds are the width of those of new silk. Place it in a clean towel, and clean each piece of the silk in the same manner, laying one piece on the other, and remembering by a mark which is the last piece done, as that this must be the last ironed.

Let the silk lie folded in the towel until a large iron is well heated; but be careful that it is not *too hot;* try it first on paper, or a piece of old damped silk. Use two irons. Open the towel when the iron is ready, and place the piece of silk that was *first* cleaned on an old tablecloth or sheet folded thick; iron the *wrong side* quickly, from edge to edge, until dry. Fold the silk over lightly to the width of new silk, and place it on one end of the table until all is done. This simple process stiffens, cleans and makes the silk look new.

Directions for Cleaning Black Merino, or any Woolen Stuff, Black Cloth Jackets, Cloaks, or Gentlemen's Clothes, etc.—Purchase at a chemist's five cents' worth of carbonate of ammonia. Place it in a clean quart pudding basin and pour upon it a pint of boiling water; cover it over with a clean plate and let it stand to get cold. Having taken entirely to pieces the dress, jacket or cloak, shake each piece well; then spread a large newspaper over a deal table, place one breadth of the material upon it, and brush it well on both sides with a *fine hard* brush; shake it again and place it on one side of the table, folded in half. Brush and shake in the same manner each piece, folding and placing one piece on the other at the end of the table. When all are brushed, remove the paper and replace it with a fresh one, upon which place another, if thin. Lay upon the paper one breadth of the stuff, quite smooth and flat, the wrong side next the paper; then take a piece of black merino, about half a yard square; dip it in the carbonate of ammonia and water (cold) well wet it, and wash over the stuff or cloth. If cloth, care must be taken to wash it the *right way*, so as to keep it *smooth;* when well washed over, fold the material in half, and place it in a clean towel, laying one piece over the other, until all are done. Mark the last, as that will be the last to be ironed.

Let the merino, or cloth, rest in the towel for about an hour; then iron the *wrong side*, after placing it on a thickly folded blanket, or sheet, with a thin sheet of paper, old glazed lining out of the dress, or piece of linen, over the blanket or sheet. Iron each piece on the wrong side until quite dry, and have two heavy irons, one heating while the other is in use. Fold over the pieces, the width of the new merino, but be careful not to fold it so as to mark it sharply, especially cloth. Gentlemen's clothes can thus be cleaned without taking to pieces, or ironing, unless quite convenient. Vest and coat collars are thus easily renovated, the collar is revived, grease spots and white seams removed.

To Renovate Crape.—Brush the crape well with a soft brush, and over a wide-mouthed dish of boiling water hold tightly the crape, gradually stretching it over the dish of boiling water. If a strip of crape, it is very easily held tightly over the water, letting the piece done fall over the dish until

all is completed. The crape will become firm and fit for use, every mark and fold being removed. White or colored crape may be washed and pinned over a newspaper, or towel, on the outside of a bed, until dry.

Crape that has been exposed to rain or damp—veils especially—may be saved from spoiling by being stretched tightly on the outside of the bed with pins, until dry; and no crape should be left to dry without having been pulled into proper form. If black crape, lace or net is faded or turned brown, it may be dipped into water, colored with the blue bag, adding a lump of loaf-sugar to stiffen, and pinned onto a newspaper on a bed.

Washing Clothes.—If pipe-clay is dissolved in the water, the linen is thoroughly cleansed with half the labor and fully a saving of one-fourth of soap; and the clothes will be improved in color equally as if bleached. The pipe-clay softens the hardest water. A cent's worth to four gallons of water.

To Keep Moths from Fur and Woolen Clothes.—In May brush fur and woolen clothes, wrap them *tightly* up in linen, and put them away in drawers. Pepper or red cedar chips are good preservatives from moths, but camphor is the best.

Washing Chintzes.—These should always be washed in dry weather, but if it is very cold it is better to dry them by the fire than risk spoiling the colors from freezing in the open air. It is better, if possible, to defer their washing till the weather is suitable.

To Clean Paint.—Simmer together in a pipkin one pound of soft soap, two ounces soft pearlash, one pint of sand, and one pint of table beer; to be used as soap.

Another Way.—Grate to a fine pulp four potatoes to every quart of water; stir it; then let it settle, and pour off the liquor.

To Wash Point Lace.—Fix the lace in a frame, draw it tight and straight, make a warm suds of Castile soap and apply it gently to the lace with a fine brush; when clean on one side wash the other in the same manner. Then rinse by throwing clean water on it in which some alum has been dissolved. Then make some thin starch, apply it to the wrong side of the lace, and when dry, iron it on the same side, and pick it out with the fingers or a bodkin. To clean the lace, if not very dirty, without washing, fix it in the frame as above and go over it with fine bread-crumbs, and when done, dust out the crumbs.

To Whiten Lace.—Iron the lace slightly, then fold it and sew it in a clean linen bag, and place this for 24 hours in pure olive oil. Then boil the bag in a solution of soap and water for 15 minutes, rinse in lukewarm water, and finally dip in water containing a small quantity of starch. Then take the lace from the bag and dry it stretched on pins.

To Cleanse Feathers.—Take for every gallon of clean water 1 lb. of quicklime, mix them well together, and when the undissolved lime is precipitated in a fine powder pour off the clear lime water for use. Put the feathers to be cleansed in another tub and add to them a quantity of the clear lime water sufficient to cover the feathers about 3 inches when well immersed and stirred about therein. The feathers when thoroughly moistened will sink down and should remain in the lime water 3 or 4 days, after which the foul liquor is drawn off, the feathers rinsed with clean water and then dried.

To Wash Dresses of Fast-colored Silk.—I. Mix 1 quart of liquid ammonia in 2½ gallons of soft water with sufficient soap. Wash the dress thoroughly in this solution and rinse it in running water if possible.

II. Rub the dress with yolk of egg and wash it in clean lukewarm water, rinse in cold

water and dry at an ordinary temperature. Soak for 12 hours ⅛ ounce gum tragacanth and fleabane in water; then boil to a thin starch, through which draw the dress, and iron it between two cloths until dry.

To Make Washed Silk Glossy.—Dissolve 1 ounce of gum Arabic in ½ gallon of water, and add 2 tablespoonfuls of beef's gall and ¼ ounce of fleabane seed. Boil the whole for a quarter of an hour, and when cold spread a thin coat of it on the silk with a sponge and smooth with a linen cloth.

To Restore the Color of Fabrics.—Sponge the silk or woolen fabric with a solution of sal-ammoniac in half its quantity of water. Then with a piece of the same material rub the stains until they are dry, and the color will be restored.

Clark's Wash for Carpets.—Solution I. Dissolve 10 parts of soap in 20 of water, and add 3½ parts of soda and ½ each of liquid ammonia and spirits of wine.

Solution II., which is the *actual cleansing liquid*, consists of 4 parts of liquid ammonia and 3 of alcohol diluted with water.

The last solution is first used, and when the dirt loosened by it has been removed the soap solution is applied. Carpets thus treated regain their original colors in all their freshness, the entire operation of washing and drying a large carpet requiring but 2 hours, and the carpet need not be taken up.

To Remove Stains from Woollen Dresses.—Make a thick rubbing of soap on a damp nail-brush. Spread the stained part on a deal table. Scrub with the brush and a sprinkling of water till quite removed. Take a wet cloth and wipe off the soap.

To Remove Ink Stains.—If spilt on a table-cloth or carpet, take up quickly all you can into a spoon, and throw it in a plate or saucer, or any china article which will wash clean, or even in emergency on stout double brown paper. Take a rag or coarse cloth, dip it in cold water, and squeeze it out. Rub the stain with it, and beyond the stain on all sides, quickly and plentifully, till *every* mark of the ink has disappeared. If very promptly done, no trace will remain. A second wet cloth may be used to finish with. Cloth table-covers are generally recovered this way. Almost any stain falling on a table-cloth, carpet or hearth-rug can thus be removed by prompt measures.

Ink on Linen, Calico or White Muslin.—Immediately lay the damaged part of the article in plenty of milk. Immerse it well. Let it lie. Then rub it well. Let it lie and rub it alternately all day. Only very hard rubbing will get it out, but every vestige may be removed.

To Wash Velvet.—Boil, with constant stirring, 2 beef-galls with some soap and honey in a sufficient quantity of water. Place the velvet upon a clean damp board and freely apply the above mixture with a rag. Then wrap the velvet around a mangling roller and mangle it until the dirt has disappeared; then draw it through clean water, mangle again, and then hang up. When half dry moisten the velvet with isinglass dissolved in water, wrap it in a cloth, mangle it until dry, and raise the pile by rubbing with a cloth.

Velvet, which has become hard and rough by rain or mud, is made soft in the following manner: Moisten the back of the velvet. Secure a hot iron with the flat smoothing part up and draw the moist velvet across it. The heat converts the water into steam which penetrates through the pile of the velvet and separates the tangled threads.

Several Receipts for Liquid Washing Blue.—I. Dissolve 1 part of indigo-carmine in 10 of water and then add ½ of gum-Arabic.

II. *Concentrated Liquid Washing Blue.* Bengal indigo 2 parts, fuming sulphuric acid 9, gum-Arabic 4, water 50.

III. *Ordinary Liquid Washing Blue.*—Dissolve 2 parts of indigo in 9 of fuming sulphuric acid and mix the solution with 350 parts of water and 8 of gum-Arabic.

Washing Powders.—*Washing Crystal* is a solution of borax and soda in water.

Lustrine Alsacienne (Starch Glass).—consists of spermaceti, gum-Arabic, and borax each 1¾ ounces, glycerine 4½ ounces, distilled water 1½ pints, and some sweet-scented essence. The mixture is used with or without an addition of starch. If it is to be mixed with starch add 4 teaspoonfuls of lustrine to 4½ ounces of boiling starch. This is a standard compound.

RECEIPTS FOR
Renovating Furniture

FURNITURE VARNISH.—Heat gently, with constant stirring, 8 parts of white wax, 2 of rosin, and ½ of Venetian turpentine; pour the mixture into a glazed stone pot and add, while it is yet warm, 3500 parts of rectified oil of turpentine. After standing for 24 hours the mass forms a soft, buttery substance, and is ready for use. The articles to be varnished must be carefully cleansed with soap and water and then dried before applying the varnish. The polish obtained is not quite as brilliant as that obtained by shellac varnish, but has a peculiar, chaste appearance.

Furniture Renovator.—Mix thoroughly olive oil, 1 pound; refined oil of amber, 1 pound, and tincture of henna, 1 ounce. Keep the mixture in a well-stoppered glass bottle. For renovating the polish of furniture apply the mixture with a tuft of raw cotton and rub dry with a cotton rag.

Liquid Polish for Silver-plated Ware.—Dissolve 3 to 4 drachms of cyanide of potassium and 8 to 10 grains of nitrate of silver in 4 ounces of water. Apply with a soft tooth-brush, wash the object thoroughly with water, dry with a soft linen cloth, and polish with a chamois skin. Neither whiting nor powder of any kind should be used for cleaning and polishing; they only wear out or scratch the silver. In the case of solid silver some precipitated chalk is allowable in the solution.

For preserving the lustre of silver or plated ware, when not needed for actual use for a considerable time, a coating of collodion may be employed to great advantage. The articles are heated and the collodion is carefully applied by means of a brush, so as to cover the surface thoroughly and uniformly. It is used most conveniently when diluted with alcohol, as for photographic purposes.

New Polish for Wood.—Dissolve 6

pounds of shellac in about 4 to 5 gallons of pure alcohol. Then pour 3½ ounces of high-grade sulphuric ether over 3½ ounces of collodion cotton in a bottle, add 1¾ ounces of camphor, stir thoroughly and add 96 per cent. alcohol enough to completely dissolve the cotton.

Then pour both solutions together and shake well. The polish is then rubbed in with an oil prepared as follows: Prepare a saturated solution of camphor in good oil of rosemary and add 1¾ ounces of this to 2 pounds 3 ounces of pure linseed-oil. For finishing, dissolve benzole in alcohol and dilute at pleasure, taking care to apply the solution as weak as practicable.

Good Furniture Glue.—Boil the desired quantity of glue with water. When sufficiently boiled pour it into a porcelain dish and rub with a pestle into a thick paste free from lumps. Then pour it into an earthenware dish, let it cool and cut it into pieces of desired size. When it is to be used dissolve 2 parts of the prepared glue in 1 of ordinary whiskey diluted with 2 of water, and let it boil up once. The glue is now ready for use and can be kept for some time. It possesses extraordinary adhesive power.

Glue for Books.—Dissolve over a moderate fire 12 parts of glue to 8 of water, add 8 parts of shavings of white soap, and when all are dissolved, 6 of powdered alum, stirring the mass constantly. The sheets of paper may be either dipped into this fluid or it is applied with a sponge.

To Cleanse Marble Busts.—First free them from all dust and then wash them with very weak hydrochloric acid. Soap injures the color of the marble.

To Cleanse Alabaster.—Rub the alabaster carefully with shave-grass and then with Venetian soap and chalk, stirred into a paste with water.

To Cleanse Precious Stones.—Apply precipitated sulphur moistened with spirit of wine, and rub with a very soft brush.

To Cleanse and Beautify Old Oak Furniture.—I. Wash the furniture, in case it has any grease stains, with warm beer.

II. Boil wax and sugar in beer and rub the furniture with this by means of a brush. When dry rub until the article shows the desired lustre.

Brass—Is cleansed by rubbing it with spirits of ammonia and vinegar, and then with blotting paper soaked in spirit of wine.

Silver—Is cleansed by placing the articles for a few minutes in a boiling hot solution of tartar, and then rubbing them with soft leather.

Polishing Powder for Silverware, etc.—Mix intimately 4 parts of washed pipe-clay and 1 of purified tartar.

Gold—Is cleansed with Paris red and soft leather.

To Polish Slate (Magnus' Patent).—Mix intimately 7 parts of linseed oil, 1 of ground ochre, 3 of tar oil and 1 of asphaltum. Apply the mixture to the surface of the slate by means of a brush, then submit the article to a heat of about 200° F., when it is cooled off and polished with pumice stone and tripoli.

To Clean Dirty or Stained Furniture.—If the furniture is in a bad state, but not stained, it will be sufficient to cleanse it by well washing with spirits of turpentine, and afterward polishing with linseed oil colored with alkanet root. When, however, the furniture is stained or inky, it should be washed with sour beer or vinegar, warm; afterward rubbing the stains with spirit of salts rubbed on with a piece of rag. The wood may then be polished with linseed oil colored with alkanet root, or with beeswax dissolved in turpentine, with a little copal varnish or resin.

To Render New Mahogany Like Old.—This is of service in the cases of furniture repaired, or when lacquered handles have been changed for mahogany ones. Soap and water will darken to some extent; but if darker is required, use oil; or for very dark, lime-water. This makes old furniture look like new.

To Clean Lacquered Brass-work of Furniture.—Wash in warm water, using a soft rag. If the work will not clean by this means, it must be relacquered.

RECEIPTS for COSMETICS

THE COMPLEXION.—A daily bath is an adjunct to the beauty of the skin, and so is everything that conduces to health, such as early hours, avoidance of close, crowded rooms, a daily walk, pure air and suitable diet. Too poor and too rich diet injure the skin equally.

Care should be taken not to tan or freckle the skin. A black veil should not be worn in sunny weather. It is well not to wash the face too frequently; it should be made clean before retiring to rest at night, that nothing may obstruct the free action of the perspiration, and that, with the morning ablutions, should suffice. Of one thing be very careful; never wash the face when you are heated, or soon after walking or dancing, especially in cold water. Drinking cold water, also, at such times, is greatly injurious. Doing either is well known to cause a permanent discoloration of a frightful description. Tight lacing and tight boots are also sometimes the cause of a red nose or a skin disease.

Rose water is harmless to the skin, and sulphur is frequently beneficial. A wash of rose water and flowers of sulphur may be used when there is any disfigurement of the skin, such as we have just indicated. First wash the face clean, shake the bottle, and bathe the face at night for ten minutes. Let it dry unwiped. But unless there is any cause do not use any preparation; let well alone.

It is pleasant, after all, to think that the finest beautifiers are within the reach of every one, and are such simple cosmetics as cold water, fresh air, and temperate habits.

In proportion as we have endeavored to prove how small a part the features in themselves play as to the higher purposes of a face—namely, its identity and moral character—we have increased the responsibility of every one who carries a face as to the impression it ought to create. This responsibility of course, extends equally to man as to woman; but a larger sphere of it belongs to the latter. With her is associated a separate idea, that as beauty is proper to her, the loves and the graces are felt to reside naturally in a woman's countenance, but to be quite out of place in a man's. His face is formed to be clean, and may be allowed to be picturesque—but it is a woman's place to be beautiful.

Beauty of some kind is so much the attribute of the sex, that a woman can hardly be said to feel herself a woman who has not,

at one time of her life at all events, felt herself to be fair. Beauty confers an education of its own, and that always a feminine one. Most celebrated beauties have owed their highest charms to the refining education which their native ones have given them. It was the wisdom as well as the poetry of the age of chivalry that it supposed all women to be beautiful, and treated them as such.

A woman is not fully furnished for her part in life whose heart has not occasionally swelled with the sense of possessing some natural abilities in the great art of pleasing, opening to her knowledge secrets of strength, wonderfully intended to balance her muscular, or—if it may be—her general weakness. And herein we see how truly this attribute belongs to woman alone. Man does not need such a consciousness, and seldom has it without rendering himself extremely ridiculous; while to a woman it is one of the chief weapons in her armory.

Eau de Cologne.—An excellent form of *eau de Cologne* may be thus prepared: Take two drachms of the seeds of the lesser cardamon, and put them into a still with two quarts of rectified spirits of wine, and add twenty-four drops of each of the following oils: bergamot, lemon, orange, neroli, rosemary and cedrat; allow them to remain for a few days, and then distill three pints of perfume. Sometimes a stronger preparation is made by employing half the quantity of spirit to the same quantity of materials. This preparation may also be made by omitting the seeds, and dissolving the oils in the spirit without distillation. In this case the perfume will be improved by allowing the *eau de Cologne*, when made, to remain at rest in a cool place, such as a dry wine-cellar, for two or three months before being used.

Cosmetic Wash Powder.—Mix 400 parts of pulverized Castile soap, 33 of dry carbonate of sodium, 133 of orris root, 200 of bran of almonds, 3 of oil of bergamot, 1 of oil of lemon and $\frac{1}{5}$ of oil of cloves. A small quantity of this powder added to water gives to it a lather of an agreeable odor which cleanses and softens the skin.

Held's Washing Powder for the Hands.—Mix intimately fine wheat flour 500 parts, ordinary pulverized soap 125, finely pulverized orris root 33, oil of bergamot 2½, and keep this mixture in a well-closed jar.

In using it take 1 or 2 spoonfuls of the powder, mix it to a thin paste with water and rub the hands with this for some time, then wash them in clean water and dry them thoroughly.

Oriental Rouge.—Stir finely pulverized orris root into water and strain it several times through fine linen. The powder remaining in the linen is dried and preserved in a glass jar. In using the powder apply a little of it to the part to be rouged and rub it in with the hand for a few minutes. The skin will become red during the process, accompanied with a burning sensation, but this ceases in a short time.

Paris Powder for Beautifying the Complexion.—Steep a quantity of rice in pure clean water. Change the water every day for fourteen days until the rice is so soft that it can be easily crushed. Then pour off all the water and stir the rice into a white, milky fluid. Strain this through a hair sieve or a coarse cloth, let the fluid settle and dry the fine flour gained in this manner, and finally mix it with some pulverized soda.

GOOD HEALTH
AND
HOW TO PRESERVE IT

REGARD your health as something of vital importance. To maintain it is not only essential to long life and happiness, but also to a high order of mind and morals. An Arabian proverb says: "He who has health has hope; and he who has hope has everything." "If strong is the frame of the mother," says another proverb, "the son will give laws to the people." Emerson says, "the first wealth is health." It is easier to prevent disease than to cure it. To this end we must, of course, know the conditions necessary for the possession and preservation of health.

The agencies and influences to be spoken of in this connection are air, water, food, light, and the other forms of force and matter which determine the change of tissue in the human system. Beside these is the influence of environment, varied by individual circumstances, such as climate, soil, weather, habitation, occupation and clothing.

Health as well as disease may be inherited by children from their parents. The importance of conforming to the rules of hygiene must not, therefore, be judged merely from the individual standpoint. Such conformity will be valuable not only to parents, but also to their offspring for generations, and, if universal, will enable us, we may claim, gradually to improve the whole human race.

The first important principle by which he must be governed, who wishes to enjoy a long and healthful life, is that of securing a normal and regular continuance of tissue-change throughout his body. This tissue metamorphosis, as it is called, consists in the constantly proceeding waste of tissue and its regeneration. That these may progress freely, the following rules must be complied with:

Wholesome Food and Air.

To furnish a sufficient supply of normal, healthy blood, the food taken must be wholesome and abundant, and the air inhaled must contain the required amount of oxygen, while those constituents of the blood which represent the unavoidable tissue waste must be readily and constantly eliminated.

The circulation of the blood must be free and rapid, so that it may constantly pass through all parts of the body, in order that tissue waste may be eliminated, and that new matter may be distributed to the tissues in need of it, where new constituents are ready to be taken up.

Activity must alternate with rest in order to maintain tissue change and regeneration at the proper standard.



Healthful Dwellings

YOUR house should be so situated that there is an outfall for the waste water and sewage; and it should also be exposed fairly to the sun. The necessity for the first is obvious; a word about the latter may not be out of place. The effects of cutting off the light are seen in the blanched condition of vegetables deprived of light, or even more still in the debilitated appearance of those parts of a plant which are removed from it. What is more to the point is the effect of sunlight upon the human frame.

This has been seen in the effects upon the health of residents in different portions of the same barracks. The largest portion of ill-health was always found in those sections which were furthest removed from light and sunshine. The companies were changed back and forwards, but the illness always stuck to the dark and shaded barracks. The effect of the glancing sunlight is well seen in the convalescent, who seems positively to absorb strength and spirit by being bathed in the invigorating light.

The next matter of importance in the selection of a site is with regard to the nature of the soil. This is important from several points of view. It has been abundantly demonstrated that "dampness of soil is an important cause of phthisis to the population living on the soil," and the improvement produced by draining the subsoil in lessening the amount of consumption is marked. Where the soil is too damp this must be met, as far as possible, by careful drainage of the house and surroundings. On sand or gravel a house stands dry and warm, provided this subsoil drainage be efficient. On clay soils it is more difficult to avoid dampness, on account of the lack of absorption.

Another point to be attended to is that of the actual warmth of different soils. Some absorb heat much more readily than others, and are drier and consequently warmer to the feet. Soils give off their heat much more rapidly than they absorb it, and so cool at night very markedly. Sand, with some lime, forms the soil which absorbs heat most perfectly, then sand alone, and lastly clay—the heavier the colder. Thus in cold countries clay soils induce catarrhs, rheumatism, phthisis, etc., and sandy sails are much to be preferred. In hot countries sands are too warm for health and comfort unless covered with grass.

Rubbish and Disease.

Of all the horrible insanitary arrangements devised for the direct production of disease and ill-health the most diabolical are rubbish foundations. "Rubbish shot here" is the herald of disease and death. It is a flagrant violation of all sanitation. The rubbish consists in every case, more or less, of decaying organic matter, animal and vegetable. This decomposes, and in doing so either evolves directly active poisons, or forms a capital breeding-place for them. The houses are notoriously unhealthy, for when they are built upon rubbish the engendering of disease is converted from a probability to a certainty.

Not only is it most unwise to actually bring poison-bearing rubbish to form foundations for houses, but every old drain, cesspool, and pit should be carefully cleared away. In the midst of stately piles of buildings certain houses have been known to be infested with typhoid fever as it were smitten

with pestilence, where old unremoved cesspools remaining and poisoning the inmates have been discovered, and their removal has been followed by the cessation of the local plague. It is of vital importance that the foundation of the house be free from poisonous material.

Pipes and Ventilation.

Having seen that the site is not infected with the material for a future host of doctors' and undertakers' bills, it is important to attend to the removal of the refuse and waste from the house, and to protect it from damp. Drains should not, if possible, traverse a house, and when this is unavoidable, glazed earthenware pipes, laid in concrete or cement, carefully sealed up at the joints, and then covered by cement, should be used; and protected at the walls by relieving arches, to secure them from the effect of settlement. Ventilation of them should be provided at their entrance and exit, and access pipes should admit of ready entrance to them. They should also be periodically flushed, so as to secure them against accumulations in their interior.

To protect the house against damp it is necessary that a damp-proof course be laid over the whole of the foundation. This should consist of hard-glazed earthenware tiles, or slate laid in cement. In addition to this a dry area around the main wall is highly desirable. This is furnished by having an outer wall around the main wall, leaving a space betwixt them.

Having so secured the foundation, the outer walls may be protected against the damp produced by driving rain either by covering them with slate, or a waterproof composition. Much of the damp-absorbing power of walls depends upon the nature of the materials used in their erection, and soft porous materials are most objectionable. The same may be said of floors; which should always be of wood.

Good Drainage.

The walls of the houses should be substantial, and stout enough to protect the dweller against external damp; in which respect houses being built in towns and suburbs are lamentably defective. The roof should be well united, and the rain should be collected into sufficient and well-jointed spouting, and carefully carried off either into cisterns or drains. If the former they should be efficiently drained, so as to secure the removal of the surplus water. Defective spouts and the saturation of walls with rain-water are efficient factors in the production of disease; and a damp house is inimical to health.

The spouting should converge to one or more down-pipes which run from the roof into the drains. These down-pipes serve also another useful purpose. They serve to ventilate the drains and carry the sewer gas away from the house, and out into the air; so relieving the house from the danger of sewer-gas escaping from the water-closets, etc., and poisoning the house.

Workingmen often fall sick because they do not live rationally and do not breathe sufficiently pure air. Their homes are in many instances unhealthy, they are apt to neglect cleanliness, and for the most part they do not eat proper food. A workingman who follows out sensibly the rules we have given will find himself better off, without any additional expense, than his fellows.

The most healthful occupations are those which require an outdoor life, or which are followed at least in a fresh, pure air. Pre-eminent among these may be named gardening, farming and cattle-raising. Of course



READY FOR THE TENNIS COURT.

such a rule has some exceptions, and especially in a country like ours, where thousands of acres of virgin soil are broken every year, the exhalations from the ground, to which we trace fevers, cannot be avoided. Yet prevention is always better than cure.

Abundance of Fresh Air

THE next point to consider about the house is its air supply. This is a point of no secondary importance. A free supply of air is necessary to the wants of the system, and that air must possess several requisites: it must be pure and free from hurtful constituents, and be furnished in good quantity.

Air is a mechanical composition of nitrogen and oxygen, the oxygen being about 21 per cent. by volume, and in addition to this 3 parts per thousand of carbonic acid gas. Water in the form of vapor, and traces of ammonia, may almost be regarded as normal constituents of the atmosphere. The oxygen is the essential element.

Oxygen in an active condition is termed ozone. The consumption of this ozone by the respiration of animated creatures and the combustion of fires and flames, renders the air of towns much less invigorating than that of the open country or the ocean. Rebreathed air in close ill-ventilated rooms leads to a sense of lethargy and depression, not unfrequently combined with headache, as consequences of the imperfect removal of the carbonic acid, etc., and the absence of active oxygen. The quantity of oxygen is sensibly diminished in the air of towns. The amount of carbonic acid varies under different circumstances, but not very markedly in the open air, where it never reaches 1 per cent.

Air to be pure must contain a normal proportion of its constituents; it ceases to be so when some are present in excess or are deficient. It becomes impure by the addition of foreign matters, either solid and merely suspended in the air, or gaseous and diffused through it. The suspended matters borne by the air by which we are chiefly disturbed are the products of imperfect combustion, or smuts. They are the nuisance of every large town, especially in dark, dull weather. They blow in through the finest crevices, and settle everywhere.

Rank Impurities.

In certain states of the weather, the products of imperfect combustion form fogs, which are smoke clouds. The presence of these smuts in a condition of the finest subdivision is then readily demonstrated by the expectoration; the expectorated mucus is dark and inky from the particles arrested and detained by the mucous lining of the air tubes, and drawn in by the respiration. Through the fog the noon-day sun appears as through a piece of smoked glass; it is really seen through a smoke-laden atmosphere.

But in addition there are vegetable seeds, spores, and germs; low forms of animal life, as bacteria; products of animal life and pus-cells, especially in the air of hospital wards; particles of fabrics, cotton and wool; and at times mineral matter, as sand, forming in certain regions and clouds, the deadly

simoom which the Arabs dread. Contagious particles, though too minute to be recognizable by the most powerful microscope, or detected by the subtlest analysis, are borne in the air, and their presence demonstrated by their effects.

The odor of plants is due to minute particles of solid matter which are wafted off the plants, and bear the characteristics of each. The rose has its odor, and so have the violet and the woodbine, they are distinct and recognizable; but they have never been seen by the microscope, any more than has scarlatinal poison; no chemistry can determine their composition, which is as unknown as that of the poison of typhoid fever.

Malarial or marsh poison cannot with certainty be referred to the class of suspended agents, possibly it belongs to the gaseous division. Organic matter has been found in the dew in the malarial districts. But there exists no doubt as to the existence of malarial poison, and much is known about it, though its presence has never been demonstrated by any other means than its results. Probably fever-poisons are not gaseous but solid.

The gaseous impurities of air arise variously from the body itself, from the earth, and from manufactories. The carbonic acid which is given off by respiration is a common cause of air-contamination. Its excess in the body is always accompanied by a deficiency of oxygen, and the effects of each are with difficulty separated.

In "the black-hole of Calcutta" and the well known case of the "Londonderry," these two were combined, and the mortality in each case was fearful; in the first 123 died out of a total of 146, in the latter out of a total of 150 no less than 70 perished, simply from lack of pure air. The amount of oxygen may be reduced from 23 per cent. to 20, in close ill-ventilated places; and such diminution is not only deleterious and dangerous if carried too far, but if only existing to a lesser degree, it is baneful and injurious to the health; causing great loss of vital force and leaving the person predisposed to disease.

Emanations from the earth of an injurious character generally take their origin in decaying organic matter, and form zymotic poisons, to be considered hereafter; but sometimes gases are exhaled, as the choke damp of mines, sulphuretted hydrogen, and carbonic acid. Earth itself is a good disinfectant, and organic matter efficiently buried rarely causes any troublesome consequences.

Air is extensively contaminated by manufactories and chemical works, and in more limited areas by fumes in certain trades.

Best Methods of Ventilation

THE amount of air which each person requires is that amount which shall not allow of an accumulation of carbonic acid beyond a certain point. This gas exists normally in the air, but below four parts per thousand; an atmosphere containing 1 per cent. is odious and instinctively avoided. The sick require more air than the healthy, and in hospitals even 3500 cubic feet per hour per head has not proved sufficient to prevent the peculiar offensive odor.

Now it is obvious that the mere cubic space afforded to each person will not in itself meet the question. The rate at which

the air is renewed is a most important factor. If there are 200 cubic feet of space for each person, it is obvious that the air must be renewed ten times per hour in order to afford each person 2000 cubic feet of air in that time. If the space for each person is 400 feet, the air need only be renewed five times per hour.

The rate with which air passes into and through a room involves the question of draughts. In order to keep a small room efficiently ventilated, the movement of air must be so rapid as to cause a draught, and draughts are common exciting causes of illness. Large rooms are better than small ones, because the air has not to be so frequently renewed, and draughts are thus avoided; the number of persons being alike in each case. When the rate of change of air in a room exceeds three or four times per hour it becomes disagreeable, and warmed air is requisite.

Natural Ventilation.

This is achieved by the readiness with which gases diffuse themselves through the atmosphere by winds and the circulation of air currents. Currents are largely produced by changes of temperatures: as seen in the sea breeze of the morning and the land breeze at night, the air coming off the heated land in the evening and returning again when the land has been cooled by night. Artificial currents exist betwixt the heated room and the cold air outside; the hot air escaping out and the cold air coming in. The rushing of the heated air up the chimney or stove causes a draught to the fire and consequently ventilation of the room.

The efficient ventilation of a room is so commonly productive of cold draughts, that various contrivances have been devised to obviate these unpleasant consequences. Ventilators have been put in the roof or ceiling, from the known tendency of heated air to escape upwards, and form the usual and common means of securing a change of air in apartments. These ventilators often form shafts passing through the upper stories and emerging at the roof. These ventilators are good when they are efficient; but it is not always easy to know when the ventilation through them is active.

How to Detect an Air Current.

The plan of having a strip of paper or rag so hung as to be visible, and by its fluttering telling of an air current, and by its motionless condition informing us when the air current is arrested, is one which might be more generally adopted. The incoming current of air is and should be always directed upward toward the ceiling, so that the cold draught may not strike the inmates.

There are many plans in vogue for the production of this end. One is to have either a glass louvre inserted instead of the top centre pane, or to have the pane cut into strips, which may be separated or closed by a cord. Another plan is to have the panes doubled, the incoming air being warmed in the spaces betwixt the panes, the course of the current being also thereby broken. A third plan is to have a wire screen at the top of the window, which takes the place of the window when it is drawn down.

But no plan will ever be so effective with single windows as are those where the windows are double. This is a luxury to which most people are averse, and yet the double windows deaden sound, as well as permit of an ample space where the air can be warmed and its current broken betwixt the windows. A pane can be divided into slips in the outer window at the bottom, and a louvre put in instead of a pane at the top of the inner win-

dow, and then the rate of entrance can be thoroughly regulated, and a perfect ventilation be established without draughts of cold air.

The effect of double windows is well seen in hospitals, and for the sake of this improved ventilation and the deadening of sound they should be introduced into banks, business houses and hospitals—the last especially—



A HOME ADMIRABLY ADAPTED FOR VENTILATION, DRAINAGE AND HEALTH.

as well as into private houses; and their introduction would be conducive to health and comfort.

An excellent plan of ventilation is to have the interspace betwixt the ceiling of one floor and the flooring of the story above, itself well ventilated; and to allow the air carried out of a room by a ventilation in the ceiling to pass into this interspace, and thence out into the open air. At other times the ventilator can be carried through a shaft to the roof, and then the shaft can be surmounted by a wire cap. A proper cap rotates and turns its back to the wind and the rain, and in order that it may do so, it should be well balanced and rotate easily.

It is almost impossible to consider the two subjects separately, as fire is used for both purposes—indeed, cannot very easily be used for one without involving the other. The combustion of the fire draws a current of air towards it in addition to the action of the shaft or chimney, and by their combined action a good change of air is maintained.

The open fire is much more efficient as a ventilating than as a warming agent, and is almost the reverse of the stove, with its heat-

giving surface. The chimney acts as a ventilating shaft, even when the fire is not burning, though the ventilation is not unobjectionable when the air current comes down the chimney.

Great Waste of Heat.

In an ordinary fireplace the waste of heat is enormous, and the statement that the actual waste of fuel is greatest in private houses is well founded. No less than seven-eighths of the heat passes up the chimney; and even with reflecting backs, etc., the waste is excessive. At the same time such a fireplace and chimney will ventilate a room capable of holding from three to six persons, as the quantity of air passing up it is equal to from 6000 to 20,000 cubic feet per hour. If the room is small and the fire brisk, the passage of the air through the room is keenly felt; and you are roasted on the side turned to the fire while the other is chilled by the cold air which rushes in behind.

Large rooms, with an equal amount of fire, are much more comfortable than small ones; provided that the large rooms are not unnecessarily airy and draughty. With the ordinary fireplace then the room is rather ventilated than warmed; and when the room is too well closed against the entrance of the cold air by chinks in the doorways and windows, the chimney has down draughts, and the cold air rushes down as well as the heated air mounts. The diffusion will take place somehow.

Many have been the inventions to render fires more useful as warming agents. One of the best contains an air chamber at the back, through which the air enters the room, and is at the same time so heated as to no longer cause a cold draught. Another is a cottage grate of fire clay, also with an air chamber. Less complicated plans of causing the back of the grate to lean forward and so throw back the heat into the room, have been more or less adopted. The desirable fireplace, of simple yet effective construction, has still to be discovered.

Several forms of stoves have been invented to economize fuel, or to utilize the heat produced. Two favorite forms have the air introduced beneath the stove and then given off, warm flanges of metal heating the air as it passes off. A dish of water gives to the heated air the requisite and desirable moisture.

The "Sun-Burner."

Some gas stoves warm the air ere giving it off into the room, moisture being furnished by a water dish. But all stoves are objectionable, for while heating the air, they give it an unwholesome dryness. The same may be said of furnaces.

Another method of utilizing flame as a ventilator is to have the gas lights so arranged in the ceiling as to form the "sun-burner," and by adding a shaft to this burner the already respired and vitiated air is drawn towards the shaft and passes away out. This forms an efficient ventilator.

But gas is an objectionable heating agent; and the arrangement must be very perfect to admit of its being used without actual detriment. The products of gas consumption are very disagreeable as well as deleterious, as every one knows who has been where gas is largely burned either as gas-light, or in the "clinker made-up grates," which, when red hot, somewhat resemble an ordinary fire. The air is heavy, unplesant, and laden with the products of combustion unless the ventilation be very perfect.

Another plan of producing warmth and ventilation is that of combined hot water pipes and air shafts. The plan of warming

a room with hot water pipes has long been in vogue, and in many instances it is an excellent and efficient mode; and it has also been proposed to have around the water pipes air shafts, so that the air might be heated by the contact with the hot water pipe.

This air shaft along the hot water pipe would surround the room, and by many minute perforations admit of the warmed air entering the chamber. Then, by means of propulsion, the air could be forced into the room at a fixed rate; and by a modification of the machinery its rate of entrance could be checked when desirable. Propulsion of air into rooms dates back to the year 1734, and the idea of warming it ere its introduction into the room has existed since 1713.

Extraction of air by a fan is used in some large buildings to maintain a practically sufficient ventilation. Whenever hot pipes are used to warm rooms it must not be forgotten that there is no longer the air current established and maintained by an open flame; and special means must be taken to maintain the ventilation. The tendency to exclude fresh air from rooms is only too deep-rooted, and the more effectually most of the chinks in the room are closed the more active will be the draught from the unclosed chinks. If all the chinks are closed the atmosphere of the room will become very vitiated; and all the consequences of bad ventilation will be artifically secured. Sickness is sure to result.

The Water Supply

WE will now proceed to examine the question of water supply: a question not less important than those hitherto discussed. Water, which consists of a chemical combination of hydrogen and oxygen, is essential to the life of every living thing, animal and vegetable. The circulation of water, bearing certain matters with it, is as important to the life and growth of vegetables as it is to animals; and both alike die if deprived of it. Its supply to crowded populations in towns has been ever most important; and magnificent systems of water supply characterized many extinct civilizations, as well as forming one of the most important subjects which engage our attention at the present.

The aqueducts of ancient Rome and Peru put in the shade the punier efforts of more recent times. The dark ages were dark indeed, and the darkness was most marked in matters sanitary; and we are but slowly recognizing the importance of our water supply.

The amount of water required by each individual per diem varies from seventy to a hundred ounces: one third of which is contained in our articles of food. From half a gallon to a gallon daily is further required for cooking purposes.

A varying quantity is consumed by different individuals for the purposes of abultion; more especially among those who have their cold tub every morning. Another quantity is consumed for the water-closet. The calculation made for towns is usually that of thirty gallons per head; ten for personal and domestic purposes; ten for municipal purposes; and ten for trade and manufacturing purposes. If the water supply exceed this

it is almost profuse; if it fall much below it, it is insufficient.

There is much difference in the water derived from various sources; and it requires different treatment accordingly to make it wholesome. Rain-water requires to be stored in cisterns, covered in and protected from heat and cold. Being fairly pure and soft, it should not be stored in leaden cisterns. The waste water pipe of cisterns should never pass from the cistern to the drain, or sewer, unbroken.

Best Sources of Water.

River water is more or less pure, according to the soil and watershed from which it is derived. If from mountains, it is usually clear and fairly pure. It becomes muddy after heavy rains, especially in arable districts; and more in spring and autumn, when the surface is disturbed by the plough. The water which falls as rain and percolates through the earth becomes highly charged with carbonic acid, which makes it fresh and sparkling. Where it runs over lime or chalk it becomes extremely hard by taking up carbonate of lime. This hardness is removed by boiling, the lime salts encrusting the kettle or pan; and in persons liable to vesical calculus and gravel, such boiling is very desirable. Exposure to air also relieves hardness and is always desirable.

Lake water is usually pure, and from the exposure to the air the water is soft. When the washings of certain districts pass into it, it may be highly charged with organic matter, especially when it comes from mossy moorland or bogs.

In mountainous districts of the older geological formations the water is commonly very pure.

From wherever water is collected, it is usually conducted into large waterworks, and there exposed to the air in settling ponds, where any impurities of a solid character may fall; after which it should be filtered through filtering beds, and then distributed through pipes to the different divisions of towns. According to the original water, and the care with which it is manipulated, is the purity of the product. The softer and purer it is, the more deleteriously does water act upon lead, either in pipes or cisterns.



NATURE'S BEVERAGE.

Water varies in purity according to its source and the geological formation from which it is derived.

From granite and metamorphic rocks it is good and pure. From soft sandstone it varies much, and may be very impure. From sand it varies much, as does also water from gravel. From chalk it is good but hard, and

improves by boiling. From clay it is usually surface water and impure. From surface and subsoil it is often objectionable. From marshes it is highly charged with organic matter. Accordingly as these different waters meet, will be the river water which forms the sum total.

Water is also derived from springs and wells, and varies according to the position of the springs and wells and the geological formations with which they are connected.

Failure of Artesian Wells.

Artesian wells are wells sunk to a great depth ; that of Grenelle in Paris is 1800 feet deep, and that of Kissingen in Bavaria is 1878 feet in depth. The water from these wells varies much in quality, and in some districts the quantity is affected by drought. As a source of water supply for large towns they are now abandoned, being found insufficient.

Water is also procured by distillation, and by this means is produced in the purest state. It is, though bright to the eye, not palatable, but it is indispensable for chemical and medical purposes. On a large scale fresh water is now distilled from sea water for the use of ships and troops, especially where the coast water is very bad. The water from the condensing apparatus of engines is very pure and soft, capital for ablution, but not a pleasant beverage.

There are various methods for the purification of water. The chief are distillation, boiling, subsidence and filtration.

Distillation means the conversion of water into steam, and then recondensation by cooling, the impurities being left behind. It is efficient ; and, as we have just seen, useful for some purposes.

Boiling is requisite to destroy minute organisms and germs ; and it destroys those dangerous and active poisons on which many of our fevers depend. It also precipitates lime, for which purpose it is much used.

Subsidence permits of the settling down of impurities, and is often useful. By the exposure to air water is much softened, and the settling-bed serves two ends.

Water Should be Filtered.

Filtration is far the most important matter from a sanitary point of view, and is the favorite method for purifying water for use. Water may be both boiled and filtered, after which it is very pure, and free from all contamination and source of danger. Filtration is carried on on a large scale by many water companies, and their filter beds are elaborately prepared. The rate of descent should not be more than six inches per hour, nor the filtration exceed 700 gallons per square yard each twenty-four hours. But this rate is often exceeded. There are always spare filter beds to admit of the beds being cleaned and renewed.

Filtration on a small scale is now the rule in most well-managed establishments, and private manipulation is not superfluous with the best water. It is very useful in the country, where the water is not of first-class quality ; and that means very generally.

Filters, however, like most things, will not go on forever, and attention from time to time is requisite. All filters, after a time, become clogged up, and have, therefore, to be taken to pieces and thoroughly cleansed ; or, if this cannot easily be done, they may be purified by passing through them a solution of potassium permanganate, with the addition of a few drops of sulphuric acid, and, afterwards, two or three gallons of pure or distilled water, acidulated with hydrochloric acid. The charcoal in a filter may also be purified by exposing it to sun and air.

The readiness with which water conveys the germs of disease has long been known and this is one of the problems closely studied by the medical profession. Water has in it either life or death, according as it is pure or impure.

USE OF DISINFECTANTS

DISINFECTION is to be accomplished by means of antiseptics, notably fire, boiling water, chloride of lime in solution, corrosive sublimate, sulphurous acid, green and blue vitriol, carbolic acid, chloride of zinc, the mineral acids, and chlorine. It is best to use one of the first mentioned, following it up with one of the others. Carbolic acid Koch has found capable of stopping the development of micro-organisms when diluted with four hundred parts of water, and corrosive sublimate in a solution of the strength of one to three hundred thousand. The former, a product of coal-tar, is a clear, colorless, oily liquid which blisters the skin severely in a few moments, is extremely poisonous, and rapidly proves fatal.

The fact is to be noted that pure carbolic acid is not so good a disinfectant, and does not destoy bacteria with the same certainty, as when diluted with water; and, farthermore, that it displays its disinfecting properties to best advantage when in combination with water in the proportion of ten parts in the hundred.

Corrosive sublimate in concentrated form is also a violent poison, and it may be reckoned a great blessing to mankind that it suffices to destroy bacterial life in so attenuated a solution as to threaten no danger to the human organism. A sublimate solution of one in five thousand, which will infallibly destroy bacilli, and which fully suffices for most purposes of disinfection, is nevertheless, less poisonous than a five per cent. carbolic solution.

Articles to be disinfected must be spread out, not left packed up in a bundle. Corrosive sublimate attacks most metals in common use, and must therefore not be poured into leaden pipes. A concentrated solution of corrosive sublimate contains four ounces of the chemical in a gallon of water. By adding ten grains of permanganate of potash or a pound of blue vitriol the solution is colored and rendered recognizable. This solution should be left to act for about two hours. Sulphurous acid is most efficacious in damp air.

Danger from Damp Rooms.

It is always harmful to live for any length of time in rooms that are damp or cold, rooms having walls dripping with dampness or floors wet from scrubbing, and rooms where clothes are hung to dry. The more moisture the air contains, the less capable is it of absorbing the vapors of our breath and with them the disease-germs we sometimes exhale. These are then partially retained, and impede the inhalation of pure air rich in oxygen.

This interference with evaporation from the lungs and skin is very hurtful. It renders difficult the cooling-off process which our bodies constantly require, it almost arrests and quite neutralizes the activity of our skin, and interferes with the purification of the blood. The best proof of these statements is found in the distressing influence of so-called "muggy weather" when the tem-

perature of the air is not excessive, but the humidity of the atmosphere is considerable. Dry heat at from ninety to one hundred degrees Fahrenheit is easier borne than temperatures below ninety degrees when the humidity is at the point of saturation.

Damp air which is at the same time cold is more objectionable than damp warm air. On the other hand very dry air in living-rooms is very unhealthy. This condition is particularly found in rooms heated by steam, by hot water pipes, or in those heated by means of a furnace, a heater, or even a common stove. A vessel containing water should be kept in every such room upon the stove or near the register. The air heated by a furnace should pass over water before entering the room.

Treatment of Carpets.

The carpets of a house claim a special mention from us. The plan of carpeting floors to which we are accustomed is a decidedly unhealthy one. When the carpets are nailed to the floor in such a way that every portion is covered, the dust which settles upon them can only be partially removed by sweeping, and accumulates in increasing quantity upon the planking below as well as in the meshes of the carpet itself. This dust, continually raised by every footstep, inevitably renders the air unhealthy ; and the evil is increased by the layers of thick paper and cotton wadding usually interposed between the floor and the carpet by way of lining.

The floor should be inlaid, or at any rate laid in hard woods, and should be frequently polished with wax. One large carpet is used to cover the greater part of the room, or perhaps rugs are spread in different places, beneath tables, and before sofas, pianos, bookcases, and other articles of furniture, much as we are accustomed to lay them upon our carpets. This insures much greater cleanliness and a remakable absence of dust.

Special attention is called to those antiseptics, the free use of which has so much to do with arresting disease in the patient and preventing its spread to others.

Excellent Purifiers.

Some of these, and the most active, too, are produced by disengaging fumes, thus we have :

Sulphurous acid, given off by burning sulphur ; good for disinfecting rooms after the removal of the sick, or dead persons.

Chlorine, is an energetic gas, and can be readily produced by adding a little muriatic acid to a wineglassful of Condy's fluid, or to crystals of chlorate of potash.

Nitrous acid fumes are given off when strong nitric acid is added to copper filings. They are very powerful.

Iodine is a violet fume produced by throwing some scales of iodine upon a hot plate. It is penetrating and powerful, and even dangerous, and apt to produce affections of the respiratory organs if respired in any quantity. These fumes are adapted for empty rooms, dead houses, hearses, etc.

Carbolic acid. A very cheap and excellent agent ; it cleanses air ladened with putrefactive matters, or with the germs of lowly organisms ; it disinfects fæces and sewers ; it destroys fever poisons ; and is an excellent application in surgical injuries and accidents. It can be used to scrub floors, to add to water for the steeping of infected clothing, and to place in utensils to receive excreta. It can be used for outbuildings, urinals, cesspools and latrines. It is extremely poisonous, and consequently it is safest in the form of powder.

Chloralum is cheap, active and inodorous, but does not give off gases. It is useless to

clear air, but disinfects fluids, sewers, etc., and does excellently for washing and scouring.

Chloride of lime is odorous and its smell is offensive; it is a good but unpleasant disinfectant.

Chlorozone is cheap and useful; it gives off chlorine and oxygen, and is useful for all disinfecting purposes.

Chloride of zinc (Burnett's solution) is a powerful disinfectant.

Sulphate of iron is a good and cheap disinfectant for sewers, cesspools, etc., and anything needing flooding. It is readily soluble in water.

Having gone over disinfectants and their properties, we come to *Practical Disinfection*, which can be advantageously combined with hygienic precautions.

How to Use Disinfectants.

When there is an outbreak of infectious disease it is necessary (1), to isolate the sick and prevent their communication with the unaffected; (2) to remove or disinfect all refuse matter, decaying material, etc.; (3) to inspect the water supply and secure its purity; (4) to disinfect all outhouses and uncleanly premises by limewashing, etc.; (5) to prevent overcrowding; and (6) to secure good and ample ventilation.

Then come the measures to be resorted to in the sick rooms and around the invalid. The rooms should be kept clean; there should be as little communication as possible betwixt the sick and the rest of the household, except the nursing staff. Those not connected with the nursing should bring the food, fuel, water, etc., into a neighboring room, well ventilated and disinfected; and then the nurses should, after their departure, remove what is required and put out anything done with; thus the direct communication of the sick and the household will be prevented. A sheet saturated with a disinfectant should be hung over the door of the room, so as to catch any poison wafted out when the door is opened.

All slops, etc., should be disinfected ere being removed from the sick room; soiled linen should be immersed in a disinfecting solution; books and newspapers should be aired and disinfected, or if valueless they are best destroyed at once by burning. All unnecessary furniture, carpets and curtains, etc., should be removed from the sick room.

Infectious Diseases.

Then, when the disease has spent itself, care is still requisite, for then is the danger of causing infection at its height. This is especially the case in typhus fever, scarlatina and small-pox. The scarlatinal patient should be rubbed with glycerine and carbolic acid, or washed with pure tar soap, and the poison-bearing exfoliated skin removed. In small-pox, after the vesicles have commenced to dry up, similar means may be resorted to. The convalescent should not mix with others as long as the skin is peeling in scarlatina, or a crust remains in small-pox.

After the convalescent is removed, the room should be cleared out, scrubbed with a disinfectant, floors, walls and woodwork. The ceiling should be whitewashed and the room repapered, the doors and windows being thrown open for several days; at nights they may be closed, and any of the fuming disinfectants might be disengaged, and the room kept closed till morning.

The bedding, clothes, etc., should be disinfected and washed; to hang clothes up in a room, and then disengage the fuming disinfectants, leaving the rooms closed for hours, is a plan which may be adopted where the

clothes are too valuable to be destroyed and will not wash. Large disinfecting chambers for clothes are now available for public use, commonly in the hands of boards of health. Woolen clothes, especially thick ones, as loose clothes, blankets, etc., hold fever poison very tenaciously, and should always be well disinfected.

And now as to the washing of the clothes of fever patients. Are those who wash them liable to be infected or not? So far as the subject has been investigated the answer is No. In the Calcutta European General Hospital, in twenty-five years not one of the washers ever took cholera, for instance. Neither do laundresses object to the clothes of fever patients, at least so far as we can learn by inquiries. Of course no reasonable person would send the clothes away without first putting them through a disinfectant solution.

Disinfectants are so cheap and so efficacious as preventives of disease that their use is really imperative, and their cost should never be grudged.

Truths to be Remembered

THE plagues of past time weres due to the insanitary arrangements of our ancestors.

2. Sunlight has an important bearing upon health.
3. Pulmonary consumption is associated with a damp subsoil; and its prevalence is affected by drainage.
4. Sand soils are warmer than clay soils.
5. "Rubbish" foundations are fertile sources of disease.
6. Drains, damp-proof sources and dry areas are required for houses in damp situations.
7. Porous, moisture-absorbing materials are unfitted for the construction of houses.
8. The rain-water ought to be carefully conveyed away from the house and its walls.
9. The air supply of a house must be sufficient in order to secure the health of the inmates.
10. Impurities in the air are often solid, as smuts, seeds and germs.
11. Fever poisons and vegetable odors consist of minute solid particles.
12. Diminution of oxygen in the respired air, or excess of carbonic acid gas, are both deleterious.
13. Poisonous emanations may arise from the earth or be given off in manufactories, and by chemical agents used in certain crafts.
14. In imperfect ventilation the normal proportion of the constituents of the atmosphere is disturbed.
15. Not less than 1200 cubic feet of air per head per hour are requisite for health. More is required for the sick.
16. The rate at which air passes through a room, or is renewed, is as important as the cubic feet of space allotted to each person.
17. Ventilation is much aided by the fires we use.
18. Draughts may be occasioned by ventilating an apartment.
19. Ventilators are placed in the ceiling because the heated air rises.
20. Double windows are very excellent for giving ventilation without draughts.
21. Fires are as efficient for the purposes of ventilation as for warmth.
22. Cold air usually finds its way in beneath the door.

23. Arranging the gaslights of a room under the ventilator in the ceiling forms an effective ventilating agent.
24. Air can be propelled into rooms and be warmed before being admitted, with good effect.
25. Too careful exclusion of air and closure of chinks produces all the evil consequences of bad ventilation.
26. Thirty gallons of water per head daily is the calculation of water-works companies.
27. The waste pipes of cisterns should never communicate with the drain without a break, to admit of the escape of sewer gas.
28. Rain-water is soft, and though suited to ablution is not palatable as a beverage.
29. Water becomes hard from the presence of lime, and bright and sparkling from the carbonic acid gas contained in it.
30. The purer water is, the more powerfully it acts upon lead. Hence leaden cisterns are especially objectionable.
31. The quality of water is affected by the geological formations over which it flows, or from which it is derived.
32. Artesian, or very deep wells, furnish water of varying quality, usually very good, but they cannot be depended upon for the supply of large towns.
33. Water may be purified by boiling, distillation, subsidence, and filtration.
34. Family filters should be in use in every house. They can be cleansed by various means.
35. On large plains it is almost impossible to procure good water if the population be dense.
36. Our river well-heads should be covered with forests.
37. The removal of our sewage is important to our health; while sewage is a valuable manure.
38. "The rainfall to the river, and the sewage to the soil" is an apt maxim.
39. The presence of water adds to the offensiveness of decomposing matter.
40. The "dry removal" is unsuited to densely populated towns.
41. The removal of sewage by water is the easiest, cheapest and quickest.
42. The position of a water-closet in a house is more important than is commonly credited.
43. Sewers should be watertight and ventilated, to prevent the sewage gas from escaping at the water-closets.
44. Sewers should be periodically flushed, and disinfectants added to the water used for flushing purposes.
45. Sewage in rivers pollutes them, and is injurious to those persons who live further down the river and drink the water.
46. "Sewage farms," farms irrigated by sewage, are growing in favor. They are very productive, and not injurious to the public health.
47. Sewage does not exercise a prejudicial effect upon the grass, or upon the animals fed upon it, or upon the human beings who eat them.
48. Neither is parasitic disease endangered thereby.
49. Sewage is also cleansed by "purification" and "filtration" processes.
50. Many diseases are due to the contamination of water and air.
51. Malarial fevers arise from decaying vegetable matter and stagnant water.
52. Enteric or typhoid fever is the result of insanitary arrangements.
53. It is common in very wet and very dry seasons.
54. It may arise without typhoid-fever-poison being present, but its presence makes infection almost certain.
55. It is communicated to others more by the contamination of the drinking fluids than by contagion proper.
56. Enteric fever may be communicated by the milk supply.
57. Cholera is very communicable by drinking fluids tainted with its poison.
58. Cholera is much more infectious than enteric fever, and may cling to clothes and to persons.
59. Dysentery is associated with malarial fever, and arises from like exciting causes.

60. It grows up in an epidemic form in camps and armies under insanitary conditions.
61. Diarrhœa may be a simple means of getting rid of offending matter in the bowels, or it may be a grave disease.
62. Diarrhœa commonly arises from impure air and water, especially the latter.
63. The exanthems (eruptive fevers) are produced by infectious particles in the air.
64. The poison long retains its activity if not exposed to the air.
65. Epidemic disease is always most serious among those whose vital force is undermined by insanitary surroundings.
66. Decay or decomposition is a process of oxidation—of atomic activity.
67. The particles of decomposing matter may be invisible to the strongest microscope, but are evident to the smell.
68. Antiseptics unite with matter in a state of decay, and bring it into a condition where it is harmless.
69. Some fumes are very powerful disinfectants, as chlorine, iodine, sulphuric acid, etc.
70. Other disinfectants are liquid, as chloralum, etc.
71. Disinfectant powders of various kinds are useful in water-closets, privies, urinals, and sewer-traps.
72. Antiseptic soaps are often useful, and remove contamination and unpleasant odors.
73. The disinfection of the sick room, of the excreta, and the soiled clothes of the sick person is arresting the progress of infectious disease.
74. There should be no direct communication betwixt fever-patients and the household: only direct communication by the nurses should be permitted.

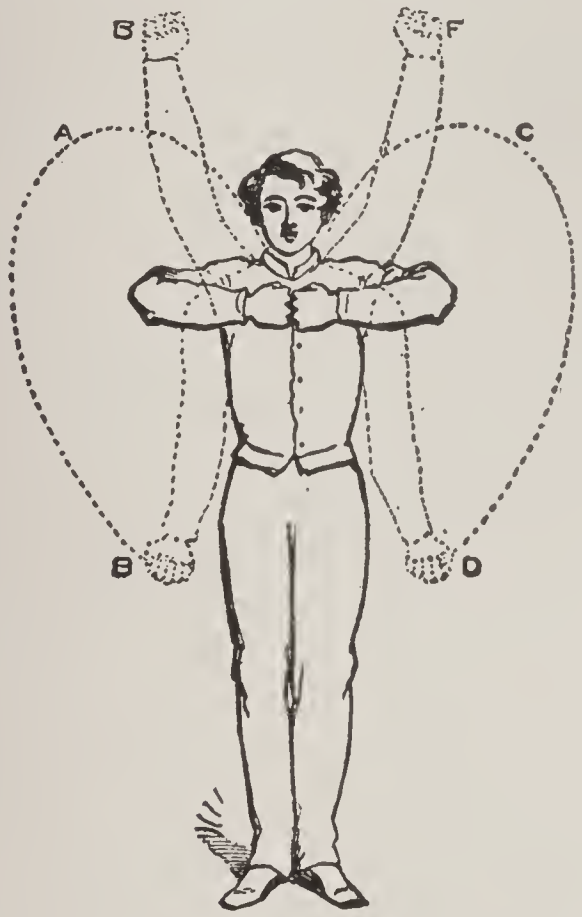
Free Gymnastics

BY free gymnastics we mean those exercises employed for developing and strengthening the muscles and organs of the body which do not require any apparatus, such as dumb-bells, swings, etc. It is surprising to what an extent the body can be trained, thereby promoting health. Let the round shoulders be straightened up. Let the muscles be made hard and pliable. Let the chest be expanded and the breathing power increased to the fullest extent. Let the step be elastic and let the whole carriage be that of an athlete.

Many persons sneer at athletics, complain that they are carried to excess, see no advantage in spending one or two hours each day in training the body, and talk about newfangled notions. They seem to prefer dyspepsia to a healthy stomach, a sallow complexion to the rosy glow of health, a bent and shrivelled form to the upright, strong, well-moulded, vigorous frame of one whose physical powers are in perfect condi-

tion. They are content to be walking ghosts, moping about with a suggestion of the graveyard in every look and motion. "Cultivate the mind," they say, forgetting that the first requisite for a sound mind is a sound body.

The question is often asked: Is the teaching of gymnastics in schools wise for girls? The question has been raised time and again, and the answer practically was given in Philadelphia, where a most thorough course was given a three-years' test. Objections to the instruction were anticipated, but all that were raised were met with a reply so complete as to usually end them. The most serious question raised was one regarding the effect of exercise in the gymnasium on delicately built girls. This was found to be beneficial, if not too violent.



Place the fists together, with their backs front, the elbows elevated as high as the shoulders. Then describe the arcs A, B and C, D half a dozen times, elevating the fists as at E and F.

The course at the Normal School was considered as near an ideal one as can well be formed. The gymnasium was in charge of a physician, and the greatest care was taken that only good should result. Some of those who watched the progress of the study, expressed a fear that the hours were too long, and reports gained circulation to the effect that girls who should not participate with the classes, went through the drills for fear of losing their status in the school.



Place the elbows by the sides, in line with the waist, and fists against the shoulders, backs front. The right forearm is carried directly down, and returned to the commencing position four times; four corresponding motions are made with the left forearm, terminating at B; then four downward motions are made alternately; and, finally, four downward motions are described with both forearms simultaneously. Then the fists are elevated to C and D.

Inquiry into these complaints developed that none of them had ever been formally laid before the Normal School authorities. From all the information obtained, it appeared that the gymnasium work in the school was very much enjoyed by the girls, who were enthusiastic regarding it, to such an extent that many remained after hours in order to receive individual instruction.

There was visible a pronounced improvement in the carriage of the students, as well as in their general health. Those most frequently excused from the exercise were

girls who wore tight clothing. Objections have been raised in this enlightened age by some fond parents that the gymnastic exercises have increased the waist measurements of their daughters, hence they desired that the girls should be relieved of the class instruction. This is the height of folly.



This is the Rocking Exercise. Swing the arms up and down, as shown by the dotted lines. Do not keep your body stiff, but let it be pliable, and bend it as shown in the figure.

Two kinds of instruction are given, general gymnastic and calisthenics, the latter being obligatory.

Regarding the whole course, the principal speaks very frankly, and his answers cover all questions that could well be asked. Said he:

"The gymnasium work has, I believe, been of advantage to the students. We endeavor to guard against overwork or undue exercise. The period of exercise does not exceed twenty-five minutes, and the students are permitted to drop out of the work when they become tired or feel that it is too fatiguing for them. When physicians' certificates state that students should not take the gymnasium work, the students are excused absolutely from that part of the exercises intended to be of personal benefit.

"As all our students are in the institution for the purpose of being trained for teaching, we require of everyone a knowledge of the light calisthenic exercises without apparatus, which, it is expected, they will be required to teach when they enter the elementary schools. Even from this light work students are excused, although it is an essential part of the curriculum, and as necessary to the student's preparation for her profession as is her work in other departments.

"While calisthenics have not been introduced as yet in the elementary schools as a formal part of the work, yet physical exercises have, through the enterprise of many progressive teachers, found a place already



This figure shows three classes of movements: from A to B, from A to C, from A to D. Repeat a dozen times, thrusting the fists out with a will.

in some schools. It is confidently believed that their general introduction into the schools is not far distant.

"The Normal School is simply anticipating what is believed to be a demand of the future, and it asks nothing of its students which is unreasonable to ask of a teacher.

It endeavors to give the instruction which best fits the students for the work of teaching. Therefore, it can no more neglect physical exercises as a possible part of the elementary school work than it can neglect drawing, music or any other part of the teachers' preparation.

"As a matter of fact I have no recollection of a complaint of injury to a student by the gymnasium work, although I have received many requests of physicians to relieve students of the work—requests which are always honored.

The Students Enthusiastic.

"On our own responsibility we have been compelled to require students to cease from work, and in one instance, at least, know that the order from the department was a source of some dissatisfaction to the pupil thus affected.

"The student who is unable to take the physical exercises, which are intended for personal benefit, loses nothing in her standing if a physician's certificate states that she should not do the work. More than that, the students are often excused without such a certificate, on the judgment of the teachers in charge."

Exercise performed without moderation or rule induces all forms and all degrees of fatigue, and exposes the human machine to the various injuries which we have described as the accidents of work.

On the other hand, muscular work performed in gradually increasing quantity and according to the rules of graduated training, brings about a progressive adaptation of the organs to the performance of more and more violent exercise. It improves the human motor by giving to all its machinery a greater strength and ease of working.

Such are the results of exercise considered as an abstract factor and reduced to the *quantity* of work represented by it. But it is only by a mental effort that we can isolate the work done by the system from the organs concerned in its performance. Now these organs are not the same in all cases, and do not work in the same manner in all forms of exercise. Thus the practice of different exercises produces different effects on the system.



These movements are executed from the sides by bending both elbows simultaneously, and drawing the forearms in on odd numbers and straightening the arms on even ones, first from A A to B B; from B B to C C; from C C to D D; from D D to E E; and then back, by reversing the order of the motions. These will be made in regular order from A A to E E and back, twice with the palms out at the sides and the thumbs back; and twice with the backs of the hands out and the thumbs pointed front.

At the outset we notice a difference between the various exercises practiced; they do not all necessitate the same quantity of work. Exercises are called *violent* when they demand considerable and repeated efforts from the muscular system; they are called *moderate* when they do not demand

much work; finally, when the muscular exertion is reduced to a minimum, the exercise is called *gentle*. Running is a violent exercise, walking at a fair pace is a moderate exercise, and walking slowly is a gentle exercise.

The quantity of work done is evidently the chief element in the classification of



The right arm will describe eight as large side circles as possible, in a forward direction, as indicated by the arrow; then the left arm will describe eight corresponding circles; then eight corresponding circles with the arms alternately, the left arm commencing a circle just before the right arm has regained its commencing position, thus rendering the circle continuous; and, finally, eight corresponding circles with both arms simultaneously. All side and head circles will be described in the direction of the palms, the student standing with the feet in the military position, and bringing the arms close to the head while executing the movements. Then reverse the arms and describe the circles backwards.

bodily exercises, for it is that which most influences their effects. But, the amount of work done by the system being the same, it is not indifferent, from the hygienic standpoint, whether the work is done slowly or quickly, whether it is uninterrupted or there are frequent periods of rest.

It is important also to know if the exercise needs complicated and difficult movements, if it exacts great attention of the will, or if it can be performed automatically, and without needing the intervention of the conscious faculties.

Finally, besides the different forms of the work, it is also important to determine the mechanism of the exercise, to say what parts of the body are especially concerned in its performance, and what are indirectly associated with it.

Feats of Strength.

Violent exercise is often wrongly confused with a "feat of strength," or a "difficult" exercise. In all feats of strength it may happen that the work, without being considerable, may be executed by means of a very small number of muscles. The exercise is then merely a kind of demonstration of the muscular strength of the individuual, who, for example, performs with ten muscles a work which other people can only do with twenty.

A man who seizes a horizontal bar with one hand and raises himself with only one arm, shows that he has a very strong biceps, but the mechanical work that he performs is, in the end, strictly equal to that done by a man who pulls himself up with both arms.

Sometimes so-called feats of strength are only feats of skill. In gymnastics there are many movements which need a long apprenticeship and which, in the end, can be performed with the expenditure of an insignificant amount of force when a man has learned the trick. The difficulty in the performance of these exercises does not consist in the expenditure of very great muscular force, but in finding, from experience or from teaching, the muscles which must be thrown into action. Numerous movements performed on the trapeze need more science than strength.

We must not confuse "quantity of work" with "difficulty of work." This is a mistake of daily occurrence, and the result is that the preference is given from the hygienic standpoint to exercises which are merely clever, while the really violent exercises are abandoned, being those in which force is expended, without any laborious calculation how to use it.

Now, the general efforts of exercises are in proportion to the expenditure of force which the exercise renders necessary, and



The movements are executed with the legs unbent and their muscles rigid. The trunk is first bent to the right *as far as possible*, and recovers the vertical position four times; then four corresponding motions are made to the left; then four motions made to the sides alternately; and, finally, eight motions from side to side, the first commencing from, and the eighth terminating at, the commencing position. *All the movements are made energetically, but in slow time.*

not to the difficulties presented by the details of its execution.

By young men, and even in girls' boarding schools, we see the most complicated machinery used and the most difficult—we might say the most grotesque—movements performed. For want of an attentive analysis people do not understand that many of the games of young children are in reality violent exercises, while many of the exercises of the orthodox gymnast are merely feats of skill.

In a "feat of strength" the quantity of work done by the organism may be quite

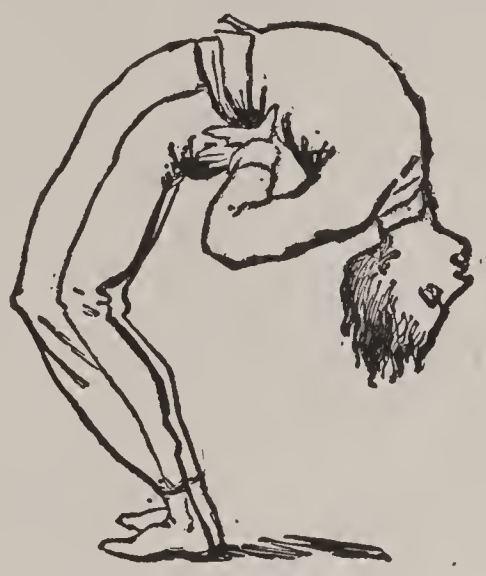


The body is bent forward and backward instead of sidewise. When making the forward motions, *the legs and the spine are kept straight*, the bending taking place only at the hips.

small, but generally the local work is very considerable in relation to the strength of the muscles which perform it. The effect of the exercise is then especially local, and may perhaps have no appreciable influence on the whole system. By continual practice in raising weights with the arm outstretched it is possible very greatly to develop the muscles which extend the arm on the shoulder; but the great organic functions, respiration, circulation, etc., will participate very little or not at all in the work.

The exercise will represent an expenditure of force capable of rapidly tiring the few muscles in action, but not enough to have much influence on the blood-current or the movements of the lungs.

In a difficult exercise, the performance of which needs the perfect co-ordination of movement, the exact weighing of the effort of each muscle, the chief expenditure will be of nervous energy, and the muscles will only perform a feeble mechanical work. The nerve centres will then have more to do with



The backward motions are usually made with the legs straight; but pupils should occasionally bend backward as far as possible. Four times are enough. Do not strain your muscles, and don't make any foolhardy attempt to reach the utmost limits.

the exercise than the muscular fibres; the psychical faculties will come more into play than the muscular strength.

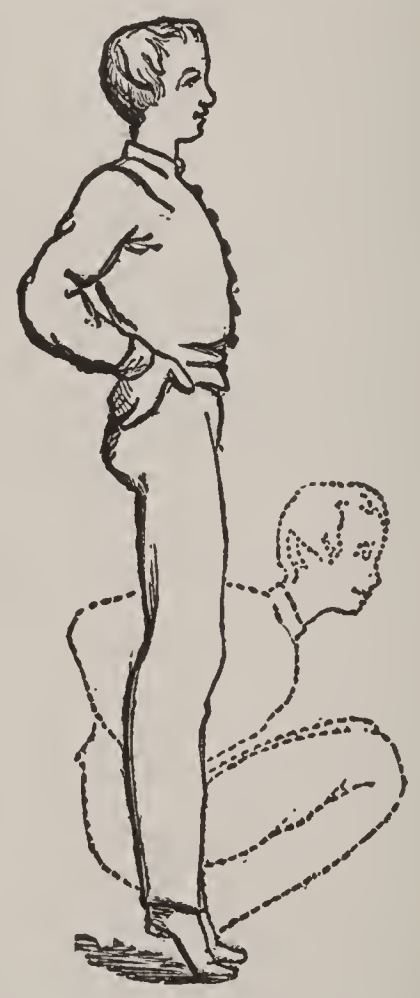
Gymnastics, as now carried on at educational establishments, make a man who devotes himself to them, spend most of his time in a long apprenticeship and in true mental work. Feats of skill are done, rather than work, in the mechanical sense of the word.

Many pupils spend months in learning a *breast* or a *balance*, and when they discover the method, the muscular trick, they do all at once with the greatest ease the muscular action which the day before seemed to be beyond their strength.

There is a close relation between increase of respiration and increase of muscular work. The energy and the frequency of the movements of the heart increase according to the same laws. The quickening of respiration only becomes excessive in exercises demanding a great expenditure of force.

Muscular fatigue may, on the other hand, be severe without the amount of work done being considerable; in the case, for instance, in which the work is done by a small number of muscles.

The form taken by fatigue after exercise, may give, physiologically, a measure of the work done in a given time. The muscular fatigue of any region of the body may serve to estimate the intensity of the local work; the measure of the total work will be given by the violence of the disturbances of the



This is the sinking movement. Let the body down as low as possible, as in the dotted part, and then raise it on its toes to the full height sixteen times.

heart and lungs, that is to say, the intensity of breathlessness and the quickening of the pulse.

The measure we suggest can evidently only be applied to the same individual, or to two individuals equal in power of resistance, in strength, and in habituation to work; but with this restriction we can adopt, as a criterion of classification, the following indication:

When, after an exercise, a man of average strength has experienced neither fatigue nor breathlessness, the exercise may be called *gentle*. When the exercise has caused local fatigue without inducing breathlessness, it will be *moderate*. It will be called *violent* when it is accompanied and followed by breathlessness.

We call exercises of strength those in which each movement represents a great quantity of work, and brings into play the contractile power of a great number of muscles.

The lifting and carrying of heavy burdens is the type of works of strength, and it is



The knee is bent as much as possible, and pointed directly down, the calf of the leg and the heel being pressed firmly against the thigh. Extend the leg, as in the dotted line, a dozen times. Then give a spring and light on the right foot, elevating the left at the same time. Repeat the same motions with the left leg.

really in the hard manual professions that we can best study their effects.

Evidently the movements of gymnastics, whose usual object is to displace the body in various directions, cannot give rise to muscular efforts as intense as those of a man who displaces at the same time a heavy burden and his own body. And, in fact, gymnastic exercises are rarely exercises of strength.

There are, however, movements performed with the aid of apparatus, which seem at first to need an enormous expenditure of force, owing to the unfavorable positions in

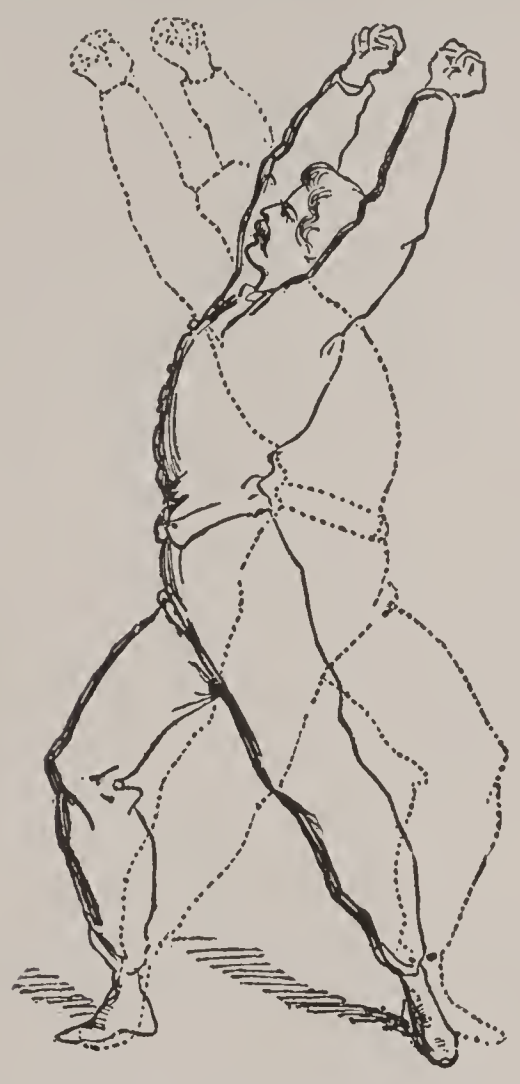


Raise the right knee to the breast, as shown in the figure, eight times; then the left knee. Then alternate, right and left, eight times.

which the bony levers act; but we soon see that muscular effort in these movements is in direct ratio to the inexperience of the gymnast. By practice we are always able to discover a process which facilitates the performance. The human machine represents an articulated system made up of a great number of movable pieces joined together.

Hence, there is an infinite number of combinations of attitudes. Often an imperceptible variation in the direction of a limb totally changes the conditions of the work. An undiscoverable variation in the performance of a *breasting* movement diminishes by nine-tenths the expenditure of force. Thus an exercise which at the outset seemed athletic, only needs, after some months practice, very moderate work.

The first effect of an exercise of strength should be to induce quickly fatigue of the muscles from which enormous work is suddenly demanded. But breathlessness precedes fatigue in the course of these exercises. However slow the movements,



A facing is executed by simultaneously turning on both heels to the right, straightening the left leg, throwing the whole weight of the body on the right knee, energetically raising both arms and projecting the chest. First, this outward motion is made to the right, and the commencing position resumed four times; then four corresponding motions from the position are made to the left; then four of these outward motions from the position are made to the right and left alternately; and, finally, eight motions are made in combination from side to side, the first commencing *from*, and only the eighth terminating *at*, the commencing position.

respiration is very quickly embarassed, and the wrestler, or the porter with a heavy burden must often stop for breath, long before their muscles are fatigued.

Exercises of strength demand great muscular expenditure, but they produce all the conditions necessary for energetic tissue-repair. They need very little work of co-ordination and do not demand a frequent repetition of movement. They occasion less disturbance in the nerves than exercises of speed, and do not demand, like exercises of skill, great brain work.

Forced labor is nearly always performed by the aid of slow and sustained contraction. The muscular fibre of a wrestler is tense in one direction for sometimes an entire minute; the muscles of a fencer are changing every moment from repose to action, and moving the limbs in the most varied directions. Powerful and sustained contractions favor the nutrition of the muscular fibre. The nutrition of muscle is more intense in slow



In executing these movements, both to the sides and in front, *the extended leg is kept perfectly straight*, and the circles are made as high and large as possible. The trunk is also kept as immovable as possible. The student should practice these movements frequently, and become as perfect in their execution as possible, as they render freer the play of the legs in their sockets, and set in active motion all the muscles of the trunk, especially those of the back and loins, as well as the muscles of the legs.

contractions, because the flow of blood is more regular and more prolonged.

Exercises of strength and *forced labor*, in spite of the great quantity of work they need, have little influence on the brain, they affect the functions of nutrition much more

than those of the nervous system. The energetic and sustained muscular contractions which they render necessary draw blood to the muscles in great quantity and keep it there a long time. The muscular fibres benefit from this, and increase in size.

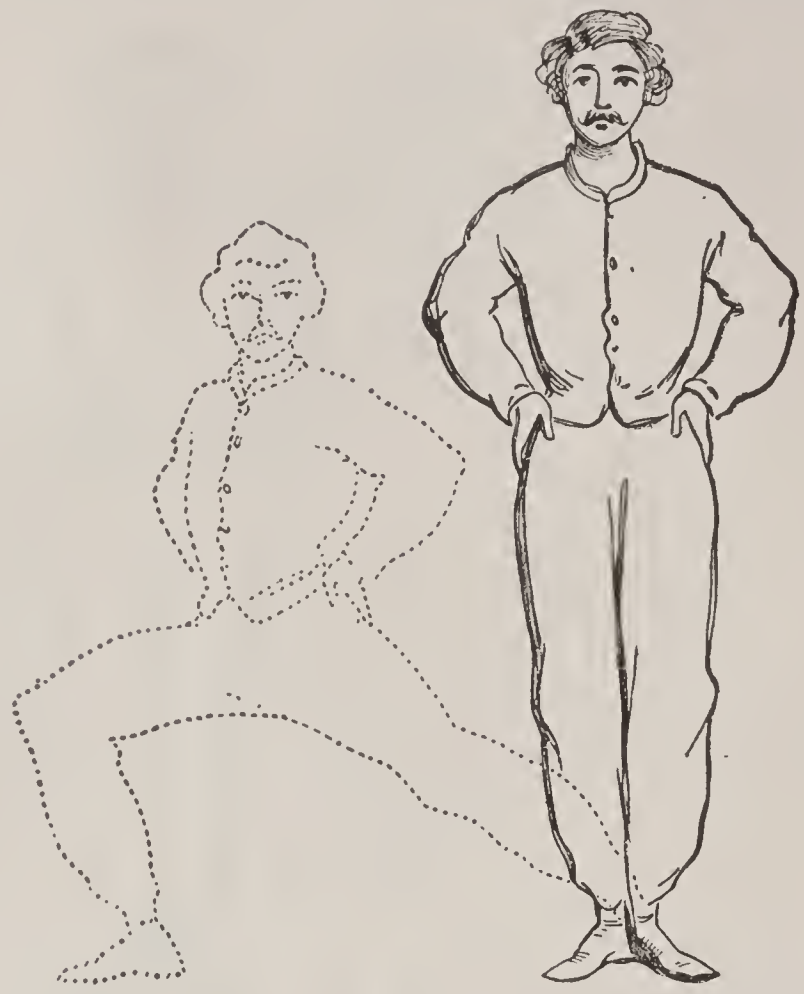
On the other hand the blood is enriched with a great quantity of oxygen, for increased respiratory need is the first effect of great expenditure of muscular force. This need finds free and easy satisfaction in the period of repose which inevitably follows each effort. Finally the intensity of the combustions due



The movements are made by sliding the toes directly front in the line D E. The right foot first passes to E, and regains the commencing position four times; then the left foot; then four of these motions from the position are made alternately; and, finally, seven front motions are made by reciprocation (four with the right foot and three with the left), the left foot being advanced at the same time the right foot is regaining the commencing position, and conversely.

to a great quantity of work, promotes the using up and prompt disappearance of the reserve materials, and the need of quick repair; whence increased appetite.

On the other hand the repeated contractions of the abdominal muscles in the frequently recurring efforts, performs a sort of massage on the intestines which favors the



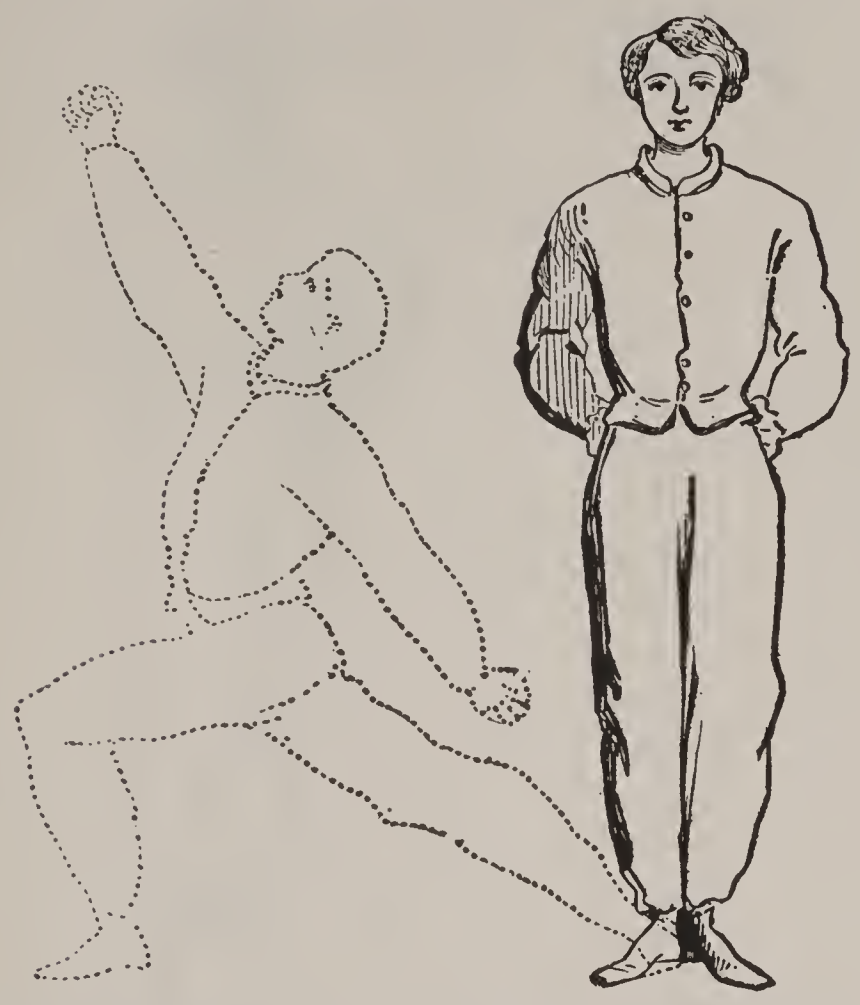
In executing charges, the student, with one foot fixed, takes strides as great as possible without preventing an easy recovery of the commencing position, in the direction prescribed. *The leg whose foot remains in position must be kept rigid and straight, and so turned upon the heel that the two feet are at right angles.* This class of movements is done by charging sidewise, first to the right with the right leg, as represented by the dotted part of the figure, and regaining the commencing position four times; then a charge is made to the left with the left leg, and the commencing position regained four times; and, finally, eight charges are made to the right and left alternately.

outward movement of the fæces and makes the bowels regular.

Exercises of strength are then favorable to all the nutritive functions. They increase energetically, and even violently, the working of all the organs of the body, while leaving in relative repose the nerve-centres and psychical faculties. Now, calm of the nervous system is a valuable condition for the repair of the losses sustained in work.

Observation of facts shows that athletic exercises, when they are not beyond the

strength of the subject, place him in the most favorable conditions of nutrition. Under the guidance of a quiet nervous system, the functions of repair are performed with the most



In executing the charge, the right arm is carried front and up at an angle of 45 degrees, and the left arm back and down at the same angle, as represented in the dotted part of the figure. In charging and facing to the left, in like manner the left arm is carried front and up, and the right one back and down.

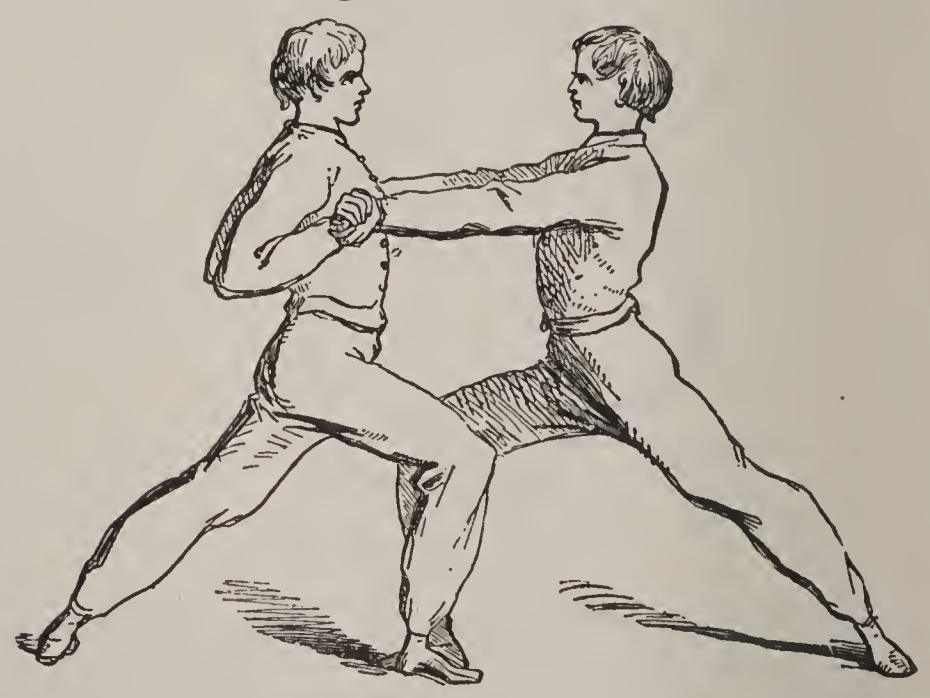
perfect regularity, and we see that the acquisitions made by the system through more perfect assimilation exceed the losses brought about by work. Exercises of strength tend to increase the weight of the subject.

Exhaustion will result from excessive work which exceeds a man's strength even if he is well fed. If a man wishes to get out of his muscles a quantity of force out of proportion to their contractile power, he is obliged to make an energetic effort of will, and he needs a great expenditure of nervous energy to excite the weak muscular fibre. He can perform a work beyond his strength, but it is by taking "from his nerves" that which his muscles are unable to give.

In this case the exercise of strength will not have its usual result of economizing nervous energy. A work of the nerve-centres is necessary to increase the irritability of the muscles. We do not know exactly in what this work consists, but we can determine its effects. The excessive exertion of the will in the work leads quickly to nervous exhaustion. The man becomes thin, eats and sleeps ill; he suffers from overwork by exhaustion. It is thus that we see horses rapidly waste and get ill, although they are well fed, if they are forced to draw too heavy a load, and their ardent and generous nature impels them to go on working up to the last limit of their strength.

We call those exercises which need the very frequent repetition of muscular movement, exercises of *speed.*

There are great differences among the various exercises of speed as regards the intensity of work. Many of them are typical violent exercises: running, for instance. Many on the contrary need so insignificant



The movements of this position correspond to those with parallel vertical bars ‖. Each student becomes a pair of *living* parallel bars—a conduit of power—a strength-giving implement, more invigorating than any apparatus of the gymnasium. The right arm of one forces back the left arm of the other eight times; then the other arms are used; then both arms together. The legs should be extended as in the figure; then should change position, each in turn being extended forward.

an expenditure of force that they hardly deserve the name of exercise. A pianist playing scales, notwithstanding the extreme speed of the movements of his fingers, performs but a trifling muscular work.

The essential character of exercises of speed is the rapid multiplication of muscular movements. A series of inconsiderable efforts, often repeated, thus allow the performance in a short time of a considerable quantity of work, without bringing into play very important muscular masses. As regards the quantity of work done, an exercise of speed may thus be absolutely equivalent to an exercise of strength.

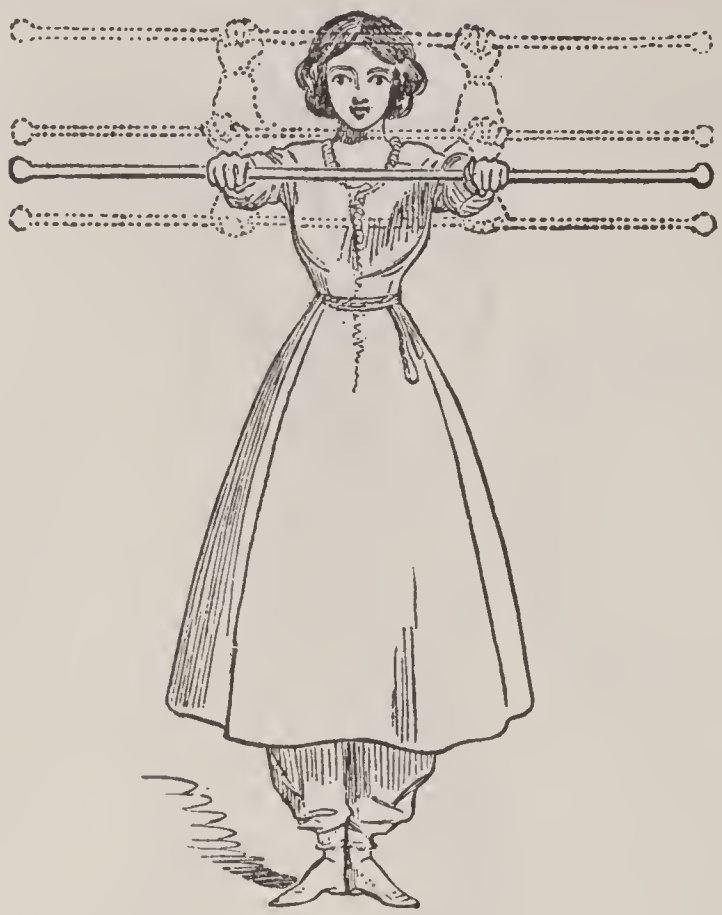
Exercises of speed, as well as exercises of strength, may then produce a great quantity



Two pupils take the position by turning back to back and standing erect, locking their arms, as shown in the figure. One, bending only at the hips, raises the other; then is lifted in turn. Repeat twenty times. This throws the shoulders back and strengthens the muscles of the breast and arms.

of work in a short space of time. From this common condition are derived certain identical effects, breathlessness for instance. But each of these kinds of exercise has its own character, from which are derived very different results.

The one kind needs that the muscles should contract with all the energy they



Seize the wand with the arms extended forward; hold the arms straight and work the hands down and up, as shown in the dotted lines. This strengthens the muscles of the wrist. Then bend the elbows and bring the wand to the forehead, as indicated in the figure. Repeat thirty times.

possess; the other does not need this, but the muscles must pass at very short intervals, and a great number of times in succession, from repose into action.

The essential character of exercises of speed, that to which their very remarkable physiological effects are due, is this frequently repeated change of the muscles from the condition of relaxation to that of contraction.

Exercises of speed produce, quite as much as exercises of strength, this *thirst for air* which is to respiration what appetite is to digestion. Skipping, running and the numerous children's games whose essential character consists in rivalry of speed amongst the players, are as valuable, and more, as exercises of strength, from the point of view of respiratory hygiene.

A child which has just been playing at running has absorbed without making any painful muscular effort, in simple "play," a greater quantity of oxygen than one which



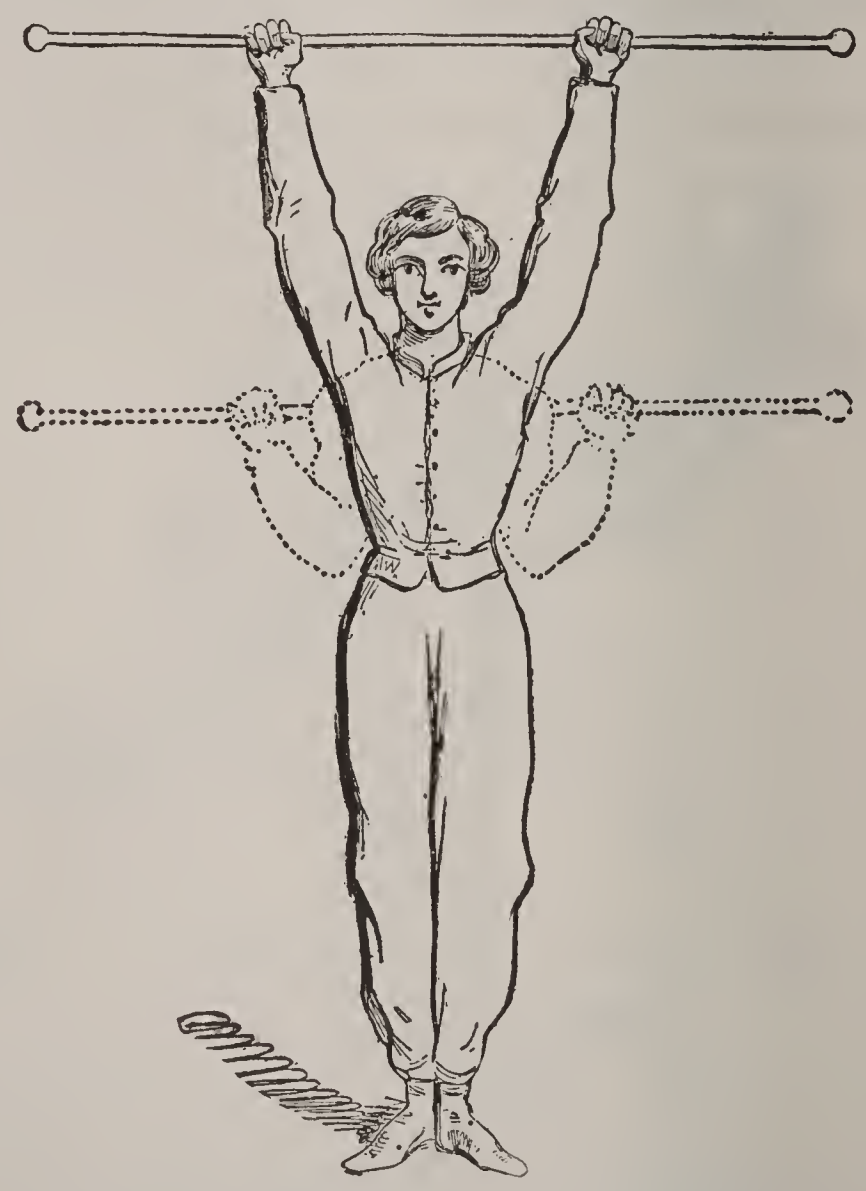
Here are two classes of movements. In the first, the arms are kept perfectly straight. Elevate the wand, as in the figure, and lower it, bringing it across the lower part of the body. Repeat twenty times. Then turn the wand over, bringing the arm to the top of the head and the elbow to the side, as seen in the dotted lines, and repeat.

has been made to use heavy dumb-bells. Now the absorption of the greatest possible quantity of oxygen seems to be, on the whole, the thing most desired, when we need the general effects of exercises with a hygienic end in view.

Among the ancients the exercises of speed always held the first rank. Running was regarded as a criterion of athletic superiority, and the characteristic of Achilles in Homer was the quickness of his legs.

Exercises which need at the same time a great expenditure of strength and a great speed may be called *forced exercises*. They demand more work from the animal machine than it is capable of performing, and must only be continued for a very short time, under pain of causing serious accidents. We rarely have to observe in men the effects of this excessive accumulation of work.

In animals we often see examples, especially in the horse, that noble animal which, as Buffon says, "dies for better obedience." An eager horse harnessed to a heavy cart, and made to gallop up hill, is doing at once a work of strength and of speed, and often

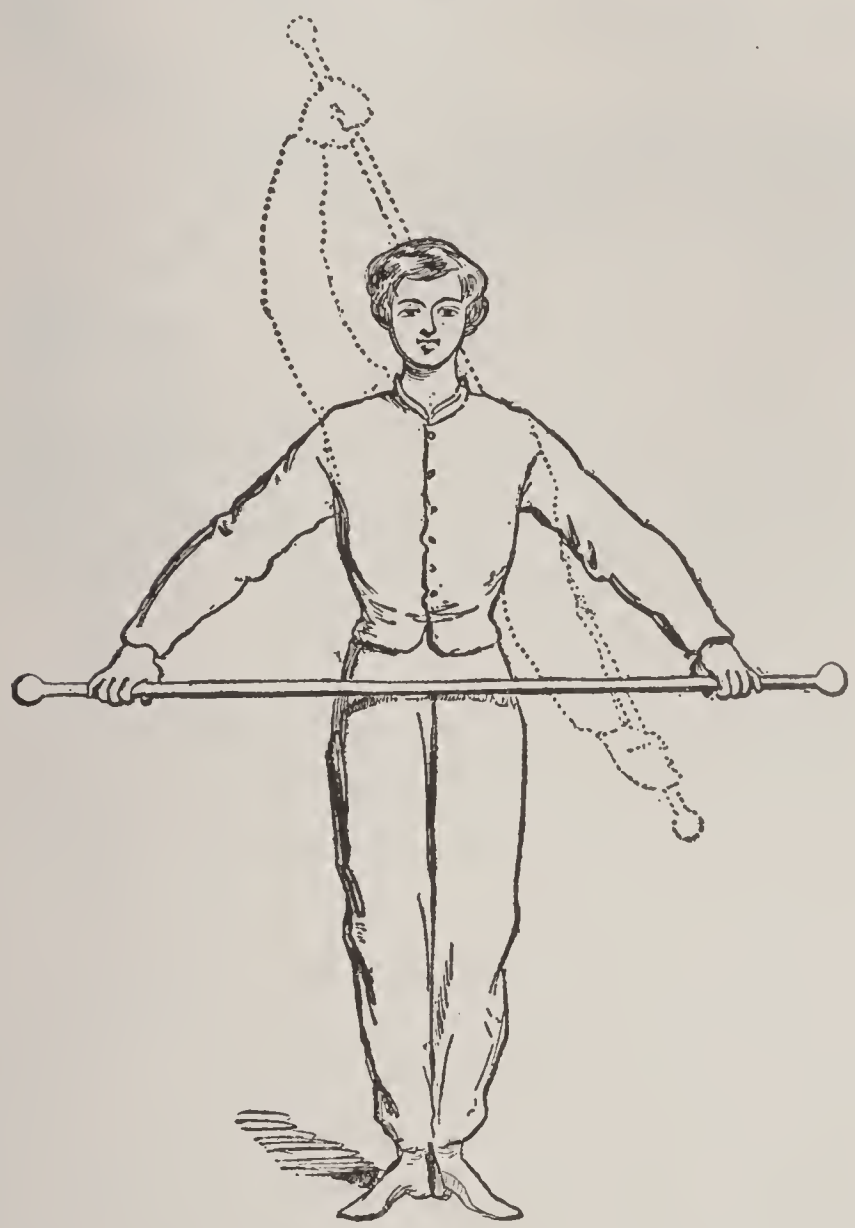


Execute the movements described in the first part of the preceding figure. Then throw the wand over the head, place it horizontally across the shoulders, bending the elbows, as shown in the dotted lines. This throws the shoulders back, and is a most invigorating exercise.

gives an example of the accidents of forced exercise; threatened with asphyxia from the accumulation of carbonic acid in the blood, exposed to ruptures of vessels, or to visceral

lacerations by the violent pressure occasioned by the effort, the animal sometimes dies suddenly from a rupture of the heart, or falls down paralyzed by a hæmorrhage in the spinal cord.

Thus, to sum up, the exercises of speed have the advantage of producing the same quantity of work as the exercises of strength, and of producing the same intensity of respiratory need. Further, they increase the activity of the respiratory functions with less fatigue of the lungs and heart, owing to the



The wand, crossing the body in front, shows the *commencing position*. Then lower the wand behind the body into a position corresponding to the commencing position. Then, keeping the arms straight, bring the wand to the position shown in the dotted lines, first one hand above the head, then the other. This compels the body to be erect, and exercises the muscles of the shoulders and arms.

absence of *effort*, which only exceptionally occurs in exercises of speed, but which is obligatory in exercises of strength. Hence a first cause for preferring exercises of speed when the object is to increase the oxygenation of the patient.

As regards the muscular system, an exercise of speed, in a given time, will produce



Hold the wand above the head, keep the arms and legs straight, and then bend forward and backward as far as possible, taking the positions seen in the dotted lines. Repeat twenty times.

less fatigue than a work of strength, and will subject the motor apparatus in a less degree to the various accidents resulting from shocks and frictions of its constituent parts.

But these advantages are counterbalanced by another which we must recognize in exercises of strength, the greater development given to the muscles. The flow of blood to the muscular fibre is more considerable in proportion to the intensity of the effort, and more prolonged in proportion to the duration of the contraction.

This fact is proved by the following observation : In a man who is being bled, the blood runs from the veins for a little while and then the flow stops. If we then cause

him to move the muscles of his forearm the flow recommences, not because the veins are emptied by increased pressure, but because the contraction draws more blood from the muscles. Now if the muscles contract in an energetic and sustained manner the flow of blood is rapid, full and uninterrupted.

If we cause the patient to make a series of small, rapidly repeated contractions of the muscles of his forearm, the flow becomes jerky, small, and in the same period of time will furnish a lesser quantity. This experiment proves that less blood traverses the muscles during a series of small contractions frequently repeated than during one long sustained contraction.

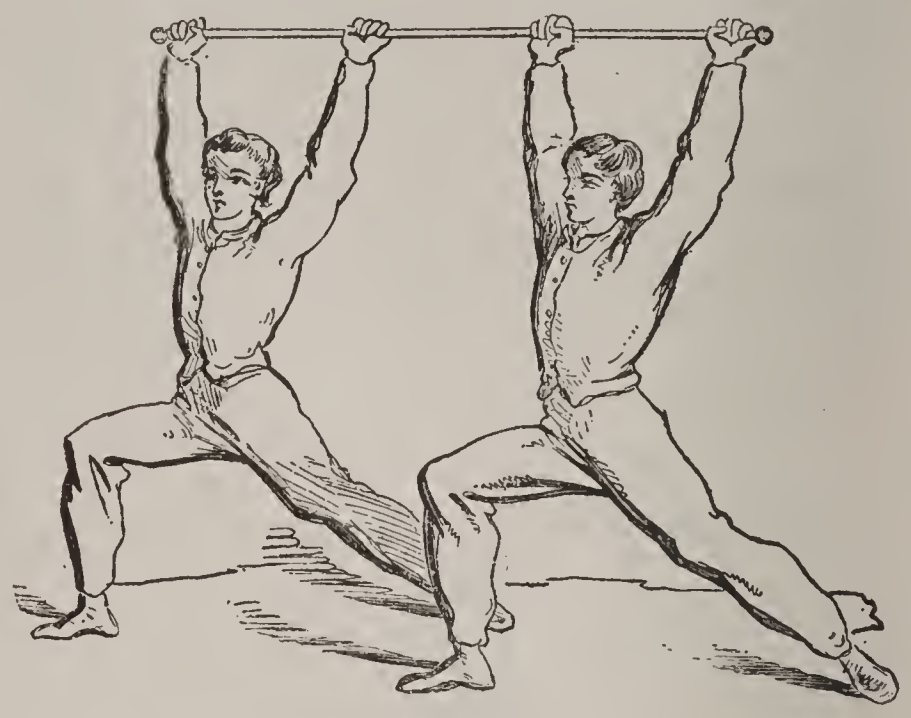
No further demonstration is needed to prove that the nutrition of muscle must be less active during exercises of speed than



This is the *charge* with the wand. In making this sidewise motion, the full weight of the body is thrown upon the advance leg, *the other leg being kept rigid and straight*, the wand being advanced in the direction of the charges, inclining up at an angle of 45 degrees, as in the dotted part of the figure. Then alternate and advance the other leg.

during exercises of strength, for we know that the nutrition of a region of the body is active in direct proportion to the quantity of blood with which it is supplied.

When we have frequented a gymnasium and have observed many men performing exercises, we have been struck by noticing the different responses of the muscles in different individuals. In some persons rapidity of movement is, so to speak, natural, and exercises of speed do not demand any great effort; their muscular tissue is very irritable.



This is a combination of arm movements and a charge. The pupils first charge toward the right, inclining front at an angle of 45 degrees, at the same time lifting their arms into a vertical position, with the wand above their heads. Then the corresponding motion is made toward the left.

In other persons, on the other hand, the muscles, although energetic, only obey the orders of the will with considerable slowness. A great expenditure of nervous energy is necessary to obtain a rapid movement.

These differences are often racial, and at the first glance are seen in the deportment. The vivacious step of the Southron contrasts with the calm posture of the man of the North. The motor fibres of the former are more responsive than those of the latter. It is curious to see these differences manifesting themselves in physical exercises, and to ascertain the difference of aptitudes resulting from them for this or that form of work.

The English and the Germans have never been able to rival the French and Italians in fencing. English boxing needs above all massive strength and power of resistance; French boxing needs, on the contrary, agility

and readiness in the blows, that is, great suddenness of attack and quickness in reply.

A boating newspaper reviewed the different methods of rowing prevalent in different regions. We were struck by noticing that in a regatta the French rowed forty strokes a minute, the Dutch only twenty-five. From thirty-six to forty is the usual number with our boat crews, such as Harvard, Yale, Cornell, the University of Pennsylvania, etc.

EXERCISES WITH Dumb Bells

HEALTH, good sound health is the one object in view. How to cultivate, tone up, strengthen, every muscle, every nerve, every organ of the body—this is the question. It is a great one, important, far-reaching, outstrips a thousand others, is worth considering, in fact, must be considered if you would live a long, happy, useful life.

Dumb-bells have long been used in gymnasiums, and their value has been fully proved. The body needs exercise; the muscles should be hardened. You should have strength; you should have speed. This we have spoken of already. Now we must add one thing more you need to have—*endurance*.

We call exercises of *endurance* those in which the work must be continued for a long time.

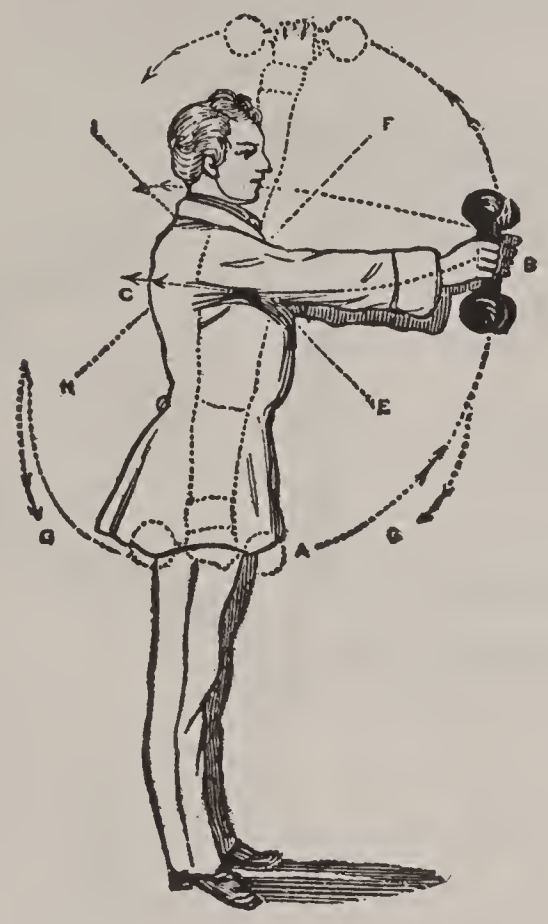
In these exercises the expenditure of force is determined less by the intensity and rapid succession of efforts than by their duration. It is necessary that the muscular effort shall not be too considerable, and the movements not too rapid, in order that fatigue under its various forms may not interrupt them too soon. So that an exercise of endurance is only moderate exercise if it lasts a short time, while it may become forced exercise if it be continued too long.

Power of Endurance.

In these exercises the quantity of work done after a long time, at the end of a day, for instance, may be very considerable, but the expenditure of force is made in such small fractions that there is no painful muscular effort, nor any marked disturbance in the organic functions. So that a man performing an exercise of endurance may pass, almost without noticing it, to strong doses of muscular work.

The animal machine is made in such a manner as to be able to perform without fatigue movements of a determined intensity and speed. When these limits are not exceeded, no appreciable disturbance is produced in the system, and the work is done amidst complete tranquility of the vital

functions. Thanks to the perfect equilibrium between the muscular exertion and the power of resistance of the subject, he is able in exercises of endurance to go on working for a



Place the dumb-bells in front, as seen in the figure, and bring them to all the positions shown in the dotted lines. Describe an arc upward and downward, keeping the arms straight. Bring the bells together by throwing the arms straight back. Bring one arm to the position F H, and the other to I E, and swing in alternation. Suspend the bells at the sides and draw them up under the arms, doubling in the wrists. Double the elbows and throw the bells back as far as possible over the shoulders.

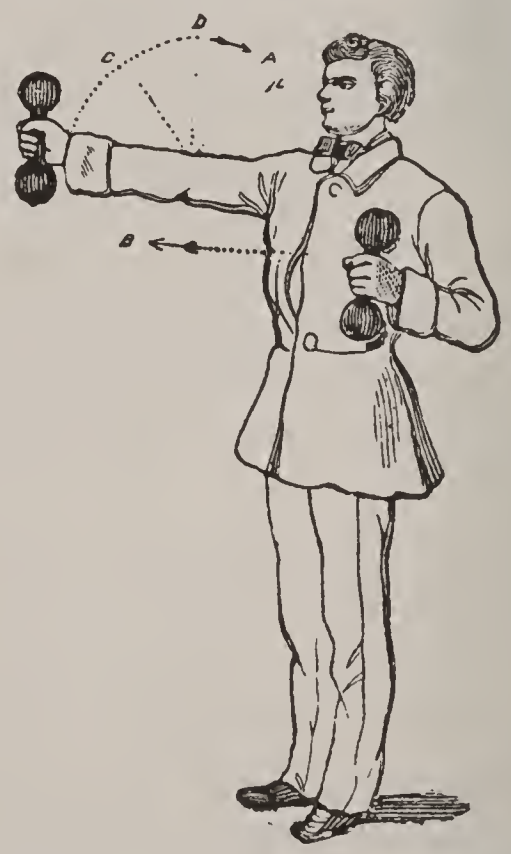
long time, and let the useful effects of work insensibly accumulate, without causing any disturbance to the various parts concerned in its performance.

We see at once the importance and usefulness of exercises of endurance when we have to do with a feeble system, with a person of low resisting power, to whom we wish to give the benefits of muscular work, while enabling him to avoid the dangers of fatigue. Similarly we are sometimes able to give a sick man a very energetic remedy by administering it to him in "fractional doses."

The division of work into fractional quantities sufficiently small to enable the system to support each one without disturbing its normal functions, such is the essential condition of exercises of endurance.

Another condition is necessary to constitute an exercise of endurance ; the muscular efforts must be at intervals sufficiently long that the effects of a second may not be added to that of a first. Between two successive doses of work there must be a sufficient time for repose.

There are organs in the human body which perform a considerable work continuously throughout life. It is surprising, for instance, to think how the hollow muscle we call the heart goes on contracting from birth till death, without ever suspending or slackening its work. This is because the cardiac muscle performs a work of endurance. The expenditure of force at each beat is well balanced with the power of resistance of the



Thrust the right arm forward, bend the elbow, describing the arc C D A ; reverse the motion, and then draw back the arm, the bell resting on the breast. Then go through similar motions with the left arm. Then make the motions with both arms simultaneously.

system of which it forms a part, and the interval between the beats is a time just long enough to rest the fibres.

We may say that respiratory fitness is the true regulator of a work of endurance.

In order that an exercise may be long continued the first condition is that it does not lead to breathlessness. We can go on walking in spite of weary legs and sore feet; but we cannot go on running when we are out of breath.

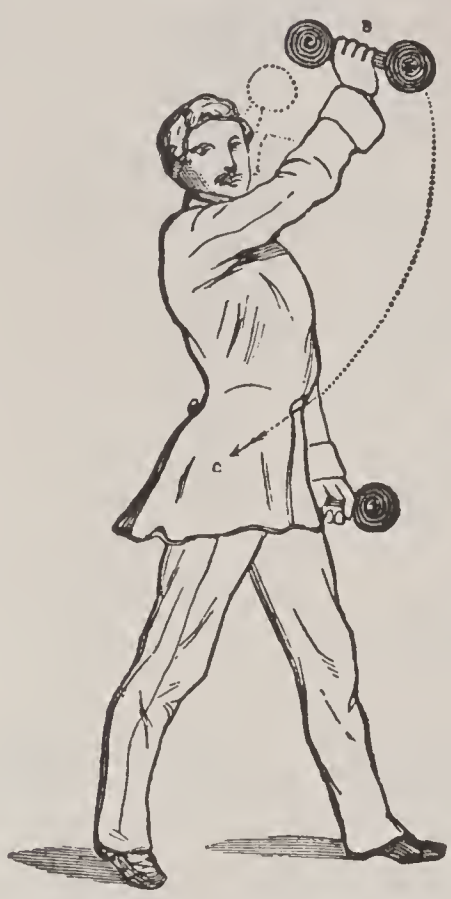
The exercises of endurance, always leaving the working of the lungs comparatively tranquil; do not demand the great inspiratory efforts which force all the air-cells to open out. In the state of repose there is always a great number of air-cells remaining inactive; their walls are flaccid and collapsed, there are whole regions of the lung which take no part in the respiratory act.



An easy exercise is formed from the previous one, with the *up* and *down* charge of the dumb-bells. From the hanging down position of the arms, A, they are drawn back, B, ready for the charge. Arms stretched to the position seen at C. Arms drawn back for the charge, dumb-bells over the shoulder, little finger uppermost. Arms charge upwards, D.

The pupil may associate with this exercise local walking, accenting each new movement with a stamp of the foot.

When the lungs bring their whole respiratory force into play, no region remains inactive, and the most remote air cells are opened up. The lungs become as large as possible, and push out the walls of the thorax. Here is the most precious effect of the exercises which cause breathlessness. They tend to increase the capacity of the



In this exercise, the right hand is drawn over the left shoulder, as seen in the figure. From this position a vigorous blow is executed, from high to low, the arm being fully stretched at the middle of the curve C, C. It is executed with the right and left alternately. The stroke can be made upward to the shoulder, from the hips, as well as downward, commencing with the left arm.

chest. Now the exercises of endurance do not lead to breathlessness.

The exercises of endurance render more active the gaseous interchange and enrich the blood with a greater quantity of oxygen, but their effect ceases there: they do not excite with sufficient violence the respiratory movements to modify the shape of the chest. They have their indications and their advantages; they also fall short in some directions. The doctor must weigh the pros and cons, and must deduce from examination of his patient the formal indication for one exercise rather than another.

Those whose lungs are suspect, for whom violent respiratory movements would present dangers; those also whose heart is not in a

state of perfect integrity, or in whom we suspect arterial degeneration which diminishes the strength of the vessels; all those, in short, whose organs of respiration and



The forearm circle.—Take the bells and bring them to the position seen in the figure. The right arm makes a circle round the left arm, while the left arm circles round the right. The motion may be reversed, alternated, made more rapidly. The upper part of the arm is kept in the horizontal position. Stand with the heels together; then with the feet spread, as at B, D.

circulation present a certain fragility, should prefer exercises of endurance to exercises of strength or of speed.

Aged men, persons suffering from gouty or alcoholic vascular degeneration, persons suffering from fatty infiltration of the heart, should confine themselves exclusively to exercise of endurance.

Patients who very easily lose breath, cannot perform any exercise of speed or of strength, and the same is the case with phthisical persons. But still patients of both these classes have need of supplementary respirations to compensate for the insufficiency of the respiratory field which has been reduced by the disease, sometimes by as much as half. Exercises of endurance constitute in such cases a valuable means of treatment.

They make it possible, through increasing by a very little at a time the carbonic acid formed by work, that the whole of this excess shall be eliminated at each expiration, there being in exchange a small excess of oxygen introduced during inspiration. If the exercise is well regulated it can be kept up for hours, and the patient will then have benefitted without incurring the dangers of breathlessness, from a series of small quantities of oxygen the sum total of which will be equal to that gained by a healthy man in an exercise of strength or of speed.

Generally we do not make use enough of



The hand-circling exercise.—Grasp the bells and elevate the arms, as shown in the figure. Now describe a circle with the other ball, moving the hand around the surface of an ideal cone, the point of which lies in the wrist joint.

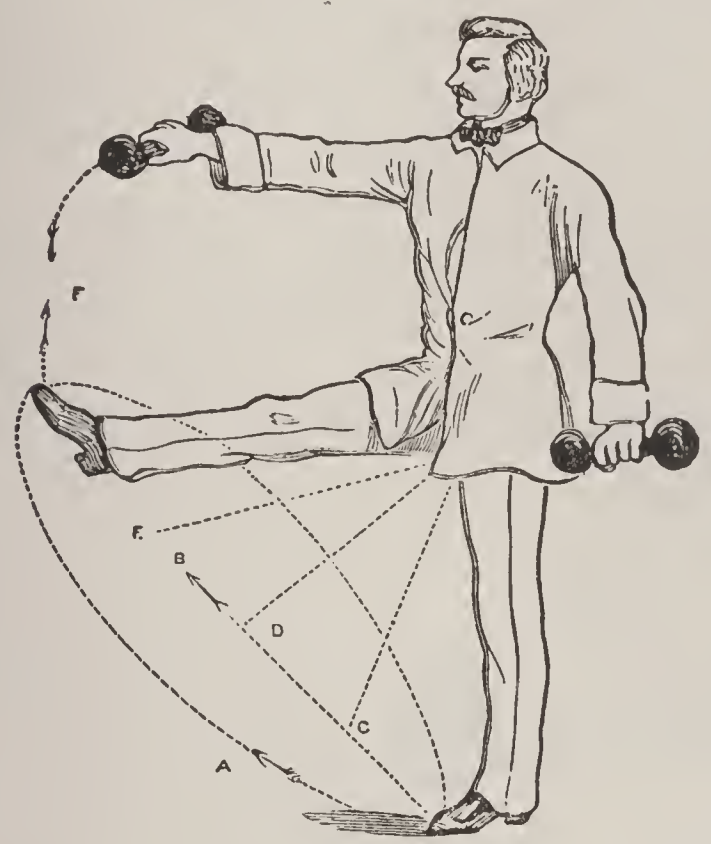
These exercises are very useful to those who habitually have cold hands, to those who, in writing or similar labor, produce a one-sided activity of that member, or where there is weakness in the wrist joint. They should be executed with the arms extended.

exercises of endurance in treating patients, with lung trouble. We should boldly prescribe for tubercular or asthmatic patients, long walks on level ground, or sustained

exercise at the oar, coming down stream and rowing with a very slow stroke.

A man who, not being in training, goes out for a day's shooting, will inevitably suffer on the following day from a more or less severe attack of stiffness, and yet his exercise, the type of an exercise of endurance, will not have produced breathlessness at any time during the day.

These observations give us the key to a



A good exercise is the *leg beat*, towards the hand F, where the dumb-bells are raised to the forward horizontal position, alternately, the left and right hand; and the leg which corresponds with the outstretched arm is swung upwards until it touches the dumb-bell; this is facilitated by slightly lowering the dumb-bell towards the foot.

To vary the exercise you can describe several circles, as at C, D, E, then touching the bell at F. Then use the other leg.

fact which is at first sight very surprising, and even inexplicable except on our theory, namely, that young persons support better exercises of speed than exercises of endurance.

A child seven years old will bear very well all the games which need rapid and prolonged running. This is owing to the wonderful ease with which its lungs adapt themselves to the exigences of forced respiration. The carbonic acid produced by work is eliminated with great rapidity and causes no inconvenience to the system.



An exercise which is especially useful consists in taking the forward spring step, with the leg that is put forward bent at the knee, as at C; the upper part of the body is kept as erect as possible. Unite with this the thrusting out of the arm on the same side as the leg which takes the forward step.

But carbonic acid is not the only product of dissimilation due to work which must be



This is a combined bell and leg exercise. Bend the leg, as at B, at the same time elevating the bells; lower the bells and bring the leg to the position of the dotted lines. Then bend the legs as far as possible. Alternate, using the other leg.

eliminated from the system, and there are others whose exit is slower, notably those resulting from the dissimilation of the nitrog-

enous tissues. Now *dissimilation is much more rapid in the child than in the adult*, for the young tissues have less stability than the adult tissues. Hence the formation of



This exercise is a beautiful one. The dumb-bells are held in a forward horizontal position, C; the feet in the locked position. The left foot steps forward; simultaneously both arms are swung backwards, as in the dotted lines. The foot returns to the locked position, the dumb-bells being at the same time carried forward to the horizontal position.

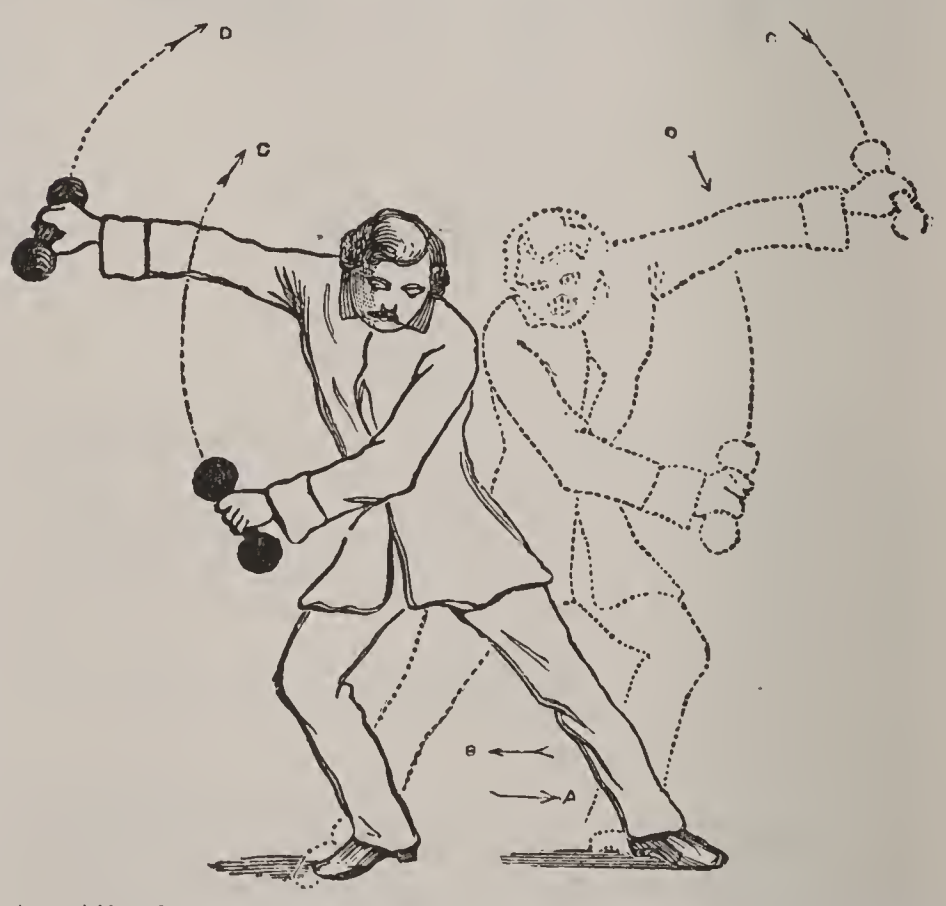
nitrogenous waste-products, of which uric acid and urates are the chief, is more abundant.

Exercises of endurance which allow of the elimination of the whole excess of carbonic acid with each expiration, lead to no accumulation of this gas, but they can cause an accumulation of the nitrogenous waste-products, for the elimination of these does not begin, as we have shown, for three or four hours after the muscular work which has caused their formation. An exercise may then be continued for four hours, and give rise throughout this time to the formation of nitrogenous waste-products, not one particle of which is being eliminated.

All these waste-products will be accumulated in the blood when the exercise has come to an end. The system which will have escaped the effects of carbonic acid, a gas which is eliminated as fast as it is formed, will not escape those of nitrogenous waste-products which will have accumulated in large quantities in the blood. There will be after the exercise of endurance is over, a true uricæmia, a surcharge of the blood with uric acid compounds.

This result explains how it is that young persons who, thanks to the adaptive power of their respiratory organs, have borne with impunity an exercise of speed, and have not lost breath, can easily suffer from febrile stiffness, and even from febrile overwork, after too long a walk.

Gouty persons are, like children, exposed to the accidents of consecutive fatigue after exercises of endurance. They have already a constitutional tendency to the accumula-



The bow swinging must be executed with the legs apart, and with it the upper part of the body must be bent forward; the arms hang down, the thumbs towards each other, and the dumb-bells are swung in a large semicircle to the right and to the left, as seen in the figure. The whole body follows the motion of the dumb-bells, by turning first to one side and then to the other.

tion of uric acid in the blood, and muscular exercise causing the production of nitrogenous waste-products which cannot be eliminated as fast as they are formed, hence there

is, when the long-continued work is over, an abundance of uric acid compounds in the blood. We know that an attack of gout is due to this uric saturation of the blood, and thus are explained the attacks of gout which, in gouty subjects, almost inevitably follow a very long day's shooting, when a man has not been prepared by gradual training.

To sum up, the exercises of endurance allow of the performance of such work with great economy of fatigue. They give the system the benefit of a supplementary acquisition of oxygen, without exposing it to the dangers of forced respiration. They quicken the circulation of the blood without fatiguing the heart or violently distending the vessels. In a word they spare the whole machine during work.

But if they preserve the system from the accidents of immediate fatigue, they do not save it from consecutive fatigue. If they enable it to escape breathlessness, this is not the case as regards stiffness.

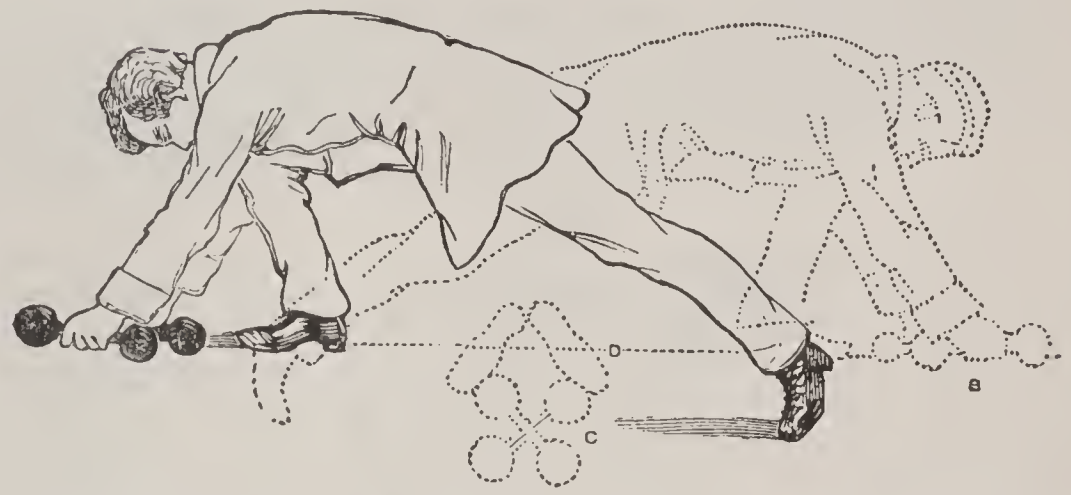
Moderate and prolonged exercise, that in which the total work is considerable, but well-divided, is suitable for patients whose respiration needs management. It cannot be prescribed without preliminary training for gouty persons, and is absolutely unsuitable for children.

Exercises of speed are well suited to young persons, who easily eliminate carbonic acid. Exercises of endurance are better suited to persons of ripe age, whose nitrogenous tissues resist better the processes of dissimilation, and form less the nitrogenous waste-products.

Exercise produces then salutary effects alike in those who *assimilate* too little and in those who do not *dissimilate* enough; muscular work is a regulator of nutrition as indispensable to over-rich as it is to impoverished constitutions. Hence there is no individual, no living being, who is not instinctively impelled to this powerful general alterative agent.

When a vigorous horse has been kept in the stable for a long time, we see it when first brought out make leaps and turns, and show by its lively paces a great desire for movement. We then say that the animal is *frisky*. This great vivacity has not, however, as its sole object the manifestation of the joy it feels at being again at liberty; it expresses the *need for exercise* which the animal feels. Similarly it is under the influence of the need for exercise that the wild beasts in a menagerie constantly prowl about their cages; that children coming out of the class-room leap and run about the recreation ground, and that dogs run after each other in the streets.

Every living being which has long been motionless experiences a need for action, and this fact is alone sufficient to prove the hygienic importance of muscular exercise.



The Transfer of Dumb-Bells.—This is an entertaining and effective exercise, which is made plain by a study of the figure. The far-apart position is taken; the dumb-bells are removed from left to right, and right to left, as far as possible.

Taking up and *putting down* the dumb-bells: this may appropriately follow the preceding exercise, and may be used at any time when in the course of his exercises the pupil wishes to put his dumb-bells down. By a spring he changes his position from the locked to the apart position, and with a bending movement of the body at the same moment, places the dumb-bells crosswise before him, as at C. He returns at once with a spring into the locked position, D, body erect. *Taking up* the dumb-bells occurs in a similar manner, by a rapid change from the apart to the locked position.

The *need for exercise* is one of the numerous sensations which lead living beings to perform actions necessary for the preservation of life or of health. Prolonged immobility produces a need for muscular exercise, just as sustained work produces a need for repose.

The need for exercise is developed with more intensity in proportion to the lowness of the temperature; by severe and piercing cold we are much more driven to action than by great heat. In this case the need for exercise is derived from the instinct which leads us to produce heat by movement.



The Stamping Exercise is executed from the apart position, with the body bent forward; the arms are drawn back and thrust forward alternately, as illustrated in the figure.

The need for repose is called *fatigue;* the need for exercise has not received a special name, but deserves one quite as much as *hunger*, *thirst*, etc.

Under the influence of deficient exercise certain materials which should be used up each day by work, accumulate in the human machine, the wheels of which they encumber and the working of which they clog. These materials are the *reserves* of which we have pointed out the origin and destination. It is necessary that the reserve materials should be used up as fast as they are formed.

When they are not regularly destroyed and they tend to hinder, by their accumulation, the working of the organs, we feel ourselves impelled to bring our muscles into action, with the unconscious object of burning these materials in the work, and the need for exercise is produced.

Great Need of Exercise.

But the superabundance of the reserve materials is not the only cause of the need for exercise; if insufficient exercise can lead to the accumulation of certain useless materials within the system, it also induces a diminution of the materials necessary to the balance of health, and thus leads to impoverishment of the constitution; so we see some persons whose life is too inactive, put on too much fat and become plethoric, whilst others waste and become thin through insufficient movement.

Thus the need for exercise is felt as much by thin people who assimilate too little as by fat people who do not dissimilate enough.

The need for exercise then responds to two physiological necessities, of which instinct gives us warning. It can come from an overcharge with reserve materials, and the urgent necessity there is that these materials should be burned; it may also arise from a general sluggishness of the functions and the need of a stimulus capable of arousing them to fresh activity.

More and more the American people are taking an active interest in physical culture. This is the result of the increasing value attached to sound health and the importance of having a physique strong enough to bear the strain imposed by our very trying climate and modes of business. We are a fast people, expending a vast amount of nervous, vital force in the grand rush and struggle for success. No longer is it considered that

the body is of little consequence. The laws that govern it and the methods for promoting sound health are being carefully studied. Physical exercises of one kind or another are taught in most of our schools, and this is the omen of a brighter day and a generation of people who shall be noble specimens of physical manhood.

The Swing and Stirrups

IN the gymnasium we call *ground* exercises those which are performed in the upright posture, and which consist in successive movements of flexion, extension, etc., of the legs, the arms, the trunk, the pelvis, and the neck. These are evidently, from an æsthetic point of view, the best of all exercises. Every limb does work in proportion to the strength of its muscles, for it moves only its own weight.

The body being supported on the legs during these exercises, the vertebral column has no tendency to assume a vicious attitude for the maintenance of an abnormal equilibrium.

These exercises would then be the best of all if they were a little more interesting to those who practise them. But they are very unattractive, as they suppress all initiative on the part of the pupil, and only need an attentive and passive obedience to orders.

There is happily another gymnastic exercise which combines with regularity in the expenditure of force a peculiar attraction, because it implies a contest of skill, agility and readiness: this is *French boxing*. This exercise is learned in a series of lessons of which each is performed alternately by the right and the left side of the body. In this manner the right leg and the right arm repeat exactly, when their turn comes, all the movements which have just been performed by the left arm and the left leg.

French boxing, in which blows are given with the feet as well as with the fist, needs every moment attitudes of great boldness.

Rapid Movements.

When a kick has to be given as high as the face, the trunk must be strongly inclined to the side to counterbalance the displacement of the centre of gravity, and this attitude would be vicious if it were always in the same direction. But the right leg, which has delivered a kick, has hardly returned to the ground when the left leg must take its turn, and repeat the attack, either directly forwards, or by the pirouette known as the *turning kick*.

With a rapidity which astonishes the spectator, the body must change from one leg to the other with a sufficiently stable equilib-



ATHLETIC EXERCISES FOR TRAINING THE BODY.

rium to propel the foot in a precise direction with great force. In order that the centre of gravity may be displaced with such marvellous ease, the vertebral column, which plays the part of a balancing-pole, must preserve an extreme mobility.

French boxing is, then, preferable to fencing for the regular development of the body of a young man and for preventing vicious carriage.

Swimming and Climbing.

Swimming needs a regular action of all the muscles. The body must progress in this exercise by a movement of extension which, beginning in the legs, spreads to the thighs, the vertebral column and the arms.

Climbing has a great resemblance to swimming. In both these exercises progression is brought about by alternate movements of flexion and extension of the body and limbs. Between these two methods of progression there seems to be at first sight only a difference of direction; in swimming it is horizontal, in climbing from below upwards.

But there is a capital difference as regards the mechanism of the work; in the swimmer the arms and shoulder move in the same horizontal plane; in the climber, on the contrary, the arms are much in advance of the chest, and their movements of flexion, the hands being fixed, tend to draw the shoulders upwards, forwards and inwards.

In the exercise of swimming there is no cause of deformity, and swimmers have, therefore, generally a very regular development.

There are certain exercises which seem at first sight to be performed by a very localized group of muscles, but which a more attentive analysis shows to be generalized throughout the body. Thus a man who rings a heavy bell does not only work with his hands which hold the rope, but with his arms which bend, with his trunk which leans forward, even with his feet, which contract in order to adhere more firmly to the ground.

Rowing is reputed to increase the size of the biceps, and this sport is generally classed with exercises of the arms. This is a mistake, for the work of the rower is far from being localized in his upper limbs. The muscular effort which moves on the boat is largely situated in the extensors of the vertebral column. The oarsman *pulls* above all with his loins. Further, when the boat is to be propelled with great speed, as in racing, the legs work at least as much as the arms.

The Oar and Paddle.

As we are writing these lines we are suffering from an attack of muscular stiffness produced by resuming the exercise of rowing after a year's interval. In the muscles of the arms we have merely a slight sensation of discomfort, but those of the loins and thighs are really painful, having been vigorously in action.

We must make a strong distinction between exercise with the oar and that with the *paddle*. In the latter exercise the canoeist derives a fixed support from the seat, and his legs do not help him at all. They usually lie in the bottom of the boat inactive and extended.

As to the trunk, it participates in the work, not by movements of flexion and extension, but by lateral displacements, now to the right, now to the left. Further, the canoeist, when making his most powerful efforts, is not leaning backwards, like the oarsman, but curved forwards.

This position is imposed by the necessity of giving to the movement of the trunk a

direction opposed to that in which the water is displaced by the motor of the boat. Now in paddling the water is displaced from before backwards, whilst in rowing it is displaced from behind forwards.

The canoeing movement is certainly very graceful. The body leans in regular rhythm to the right and to the left, and the head at each displacement is inclined in the opposite direction to the trunk, by a series of lateral inflexions of the cervical vertebræ. From these two opposed but compensatory movements, results a wave-like movement, which, added to the rapid gliding of the frail bark, forms a seductive picture.

A Curved Back.

But the canoeist's back is curved like that of the jocky, and his legs remain inactive. Hence, in our opinion, the inferiority of canoeing from the hygienic point of view. It leaves the lower limbs absolutely motionless, and it tends to produce a round back.

In rowing, the oarsman also leans forwards at intervals in order to carry his oar backwards, but this is at a stage in the exercise where no force is required and, therefore, no pressure is exercised on the vertebræ. The really energetic muscular action, the one which determines the progression of the boat, is performed by bending the body backwards; at this movement of the effort the head is high and erect, and if the movement is very powerful, the face is upturned. The really active movement in rowing consists in *extension* of the dorsal spine. No movement is more fit than this to remedy a round back.

It will be well to point out the difference between "sculling" and "rowing." In the latter case there is one oar held in both hands, which forces the oarsman to lean to the side of his oar. In sculling there is needed an equal and symmetrical effort of both hands. Hence, to preserve the straightness of the body, sculling is much superior to rowing.

We cannot review here all the exercises which are able to favor regular development. But we should like to try to define certain points which must be kept in mind when we wish to appreciate the influence of movements on bodily form.

Wrong Modes of Exercise.

First, the body left to itself, without being subjected to any external influence capable of producing deformity, tends naturally to develop in a regular direction. The causes which tend to produce deviation may be of internal orgin, such as affections of bones or joints, retractions of tendons or of muscles, and paralysis.

But the most common deformities arise from external causes, such as pressures, shocks, works or habits leading to a vicious carriage. Amongst the external agents capable of producing bodily deformity, ill-chosen or ill-directed exercise is a very frequent cause.

The vertebral column is the axis of the body. When it is normal in direction, the body is upright and the attitude is elegant. Most of the deviations of the spine have a muscular source, and arise from the predominant action of the muscles which draw the vertebræ in a given direction over those which should balance the action of these by drawing the spine in the opposite direction.

Muscular exercise tends to develop the muscles and the bones; it is enough that this development should be regular, that no region of the body should acquire an exaggerated size capable of destroying harmony of proportion, and that no portion of the skeleton should assume a vicious direction.

Neglect of all exercise sometimes coincides with deviations of the body, but these are almost always due to a habitually vicious carriage, such as is observed in persons of sedentary life. The schoolboy kept in class from morning till evening, the artisan kept all day in the workshop, often present deviations of the figure; but the vicious position of the body needed for writing is the true cause of the lateral curvature of the spine which is common in school-children; similarly it is to the bent attitude when working with the needle that we must attribute the round back so common to tailors.

When muscular force is completely removed, as for instance in the dead body, there is a tendency to fall forwards; and if the dead body, held upright, is supported by the waist, we see the head lean down towards the chest, the shoulders fall forwards, and the back arched by an exaggerated flexion of the spine.

This stooping attitude, due to complete absence of muscular action, is an exaggeration of that observed in persons whose muscles are extremely enfeebled by inaction.



SPORT IN THE GYMNASIUM.

The round back is in these persons always accompanied by a receding chest, first because muscular inaction leads to diminution in the size of the thorax; secondly, because



FIGURE 1.

in a side view of the body, very pronounced convexity of the back tends by comparison to cause the line of the sternum to appear flat, and even concave. We observe this characteristic deformity in all cases in which young persons have led too sedentary a life, deprived of air and movement.

Muscular exercise, in whatever form, gives marvellous results in these deformities in which we cannot properly speak of a deviation to be remedied, but rather of a weakened part to be supported. The vertebral column promptly finds energetic support from the spinal muscles as soon as a man begins to perform violent movements, for every work needing a certain expenditure of force demands action from these muscles for the purpose of fixing the vertebral column, the centre and pivot in all movements of the trunk and limbs.

But aside from these cases of excessive debility, it is not from increased strength of the muscles that we must demand the means of restoring perfect uprightness to the figure. The persons who are most remarkable for elegance and grace are often very *supple* rather than very vigorous.

Suppleness of figure comes from the great ease with which the vertebræ can glide in all directions over each other. From this great mobility results the facility with which the various pieces of the dorsal spine accommodate themselves to the different attitudes of the body, and to the rapidity with which the trunk is balanced in all the displacements which it undergoes. So that the greatest



FIGURE 2.

possible grace of figure may be observed in clowns.

Certain exercises which demand very slight expenditure of muscular force have a

remarkable tendency to make the back very straight : these are exercises which need balancing. A rope-dancer cannot keep upright on his slender support if he allows the axis of his body to fall out of the vertical, and this axis is represented by the vertebral column.

All the movements of the acrobat tend to give to the muscles which move the vertebræ the degree of contraction necessary that the bony rod they form should have a perfectly vertical direction.



FIGURE 3.

The rope-dancer preserves when on the ground the position which his well-disciplined muscles are accustomed to give to the bones on which they act.

Balancing jugglers are, like rope-dancers and *India-rubber men*, types of perfect physical straightness ; and if we compare them, in the circus, to the gymnasts whose specialty is the trapeze, we are struck by the superiority of the former in elegance of figure.

We have seen nothing more charming than a little balancing girl who, at the circus, climbed to the top of a pyramid built of bottles, and poised herself like a bird on the neck of the highest without displacing any of them. It was marvellous to see the child,

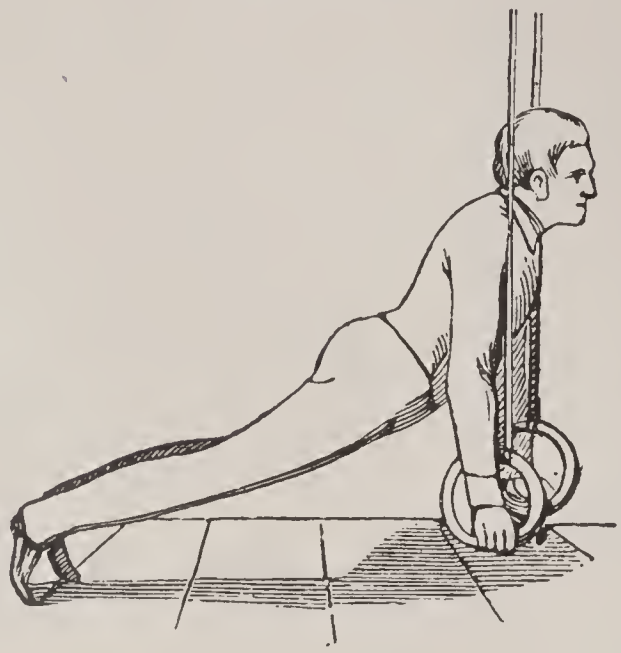


FIGURE 4.

when she had built the fragile structure, first make sure of the balance standing upright, then, putting her foot on its frail support

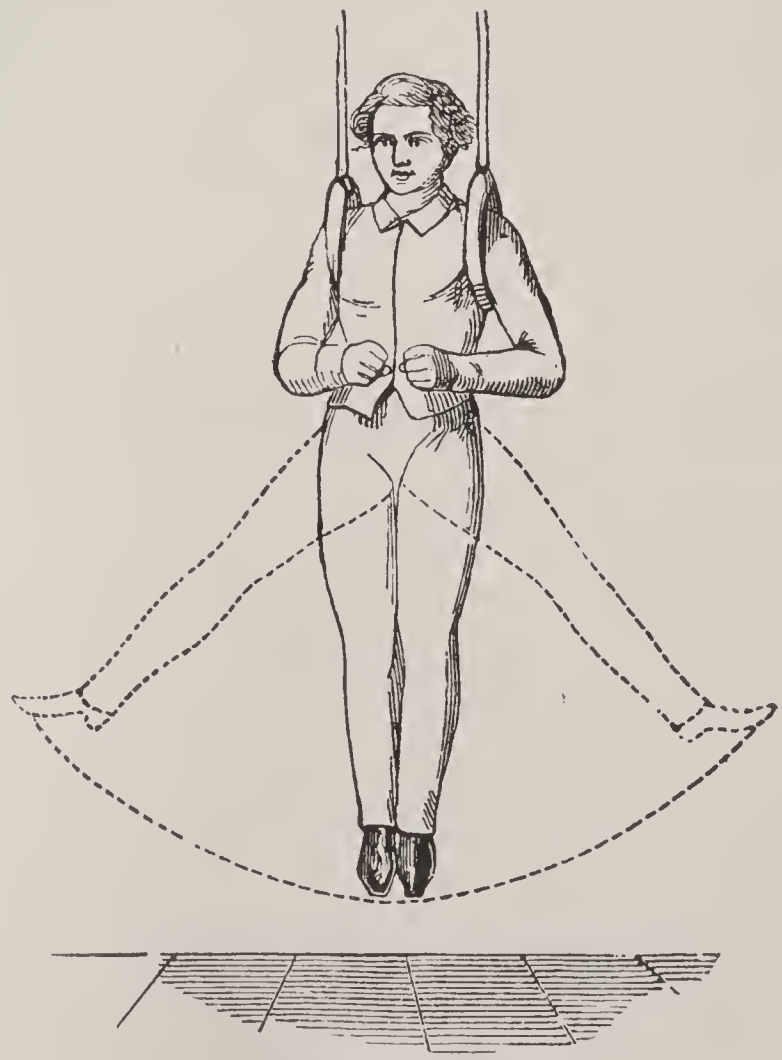


FIGURE 5.

raise herself, holding in her hand the neck of the last bottle, without the trunk deviating from the vertical by a hair's breadth.

It was then necessary, from the stooping

posture, to gain the upright one, and it was only by a mathematical precision in the con-

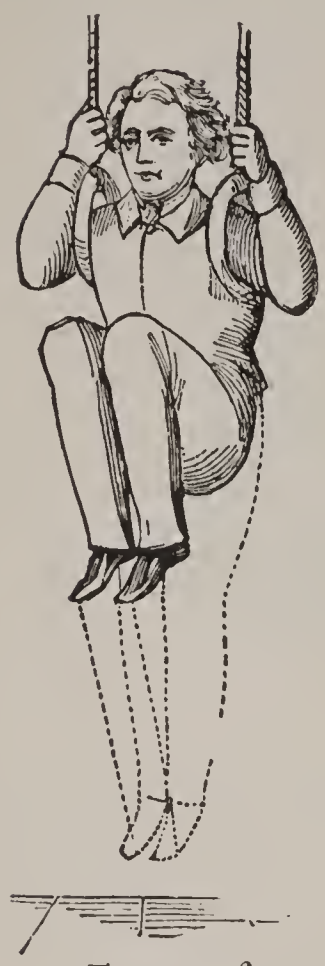


FIGURE 6.

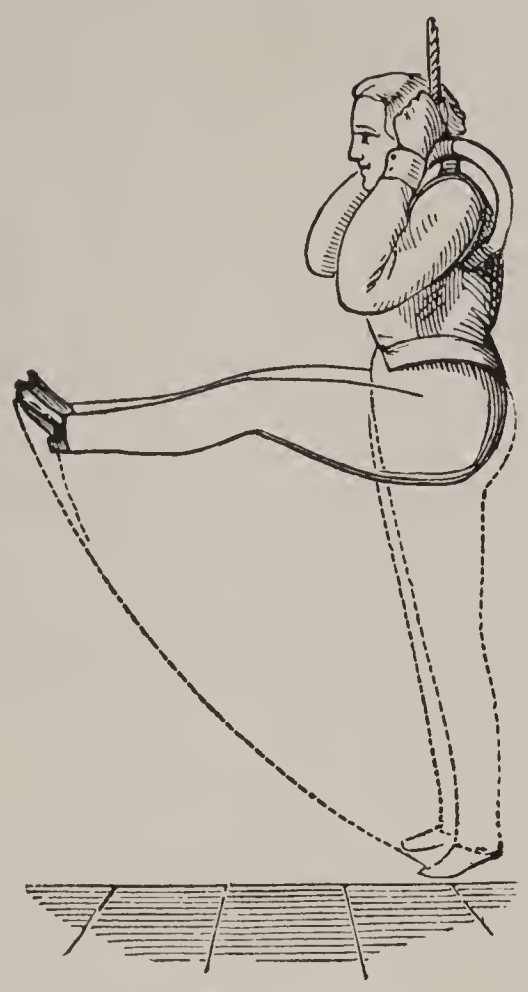


FIGURE 7.

traction of the vertebral muscles that the extension of the legs and thighs could be

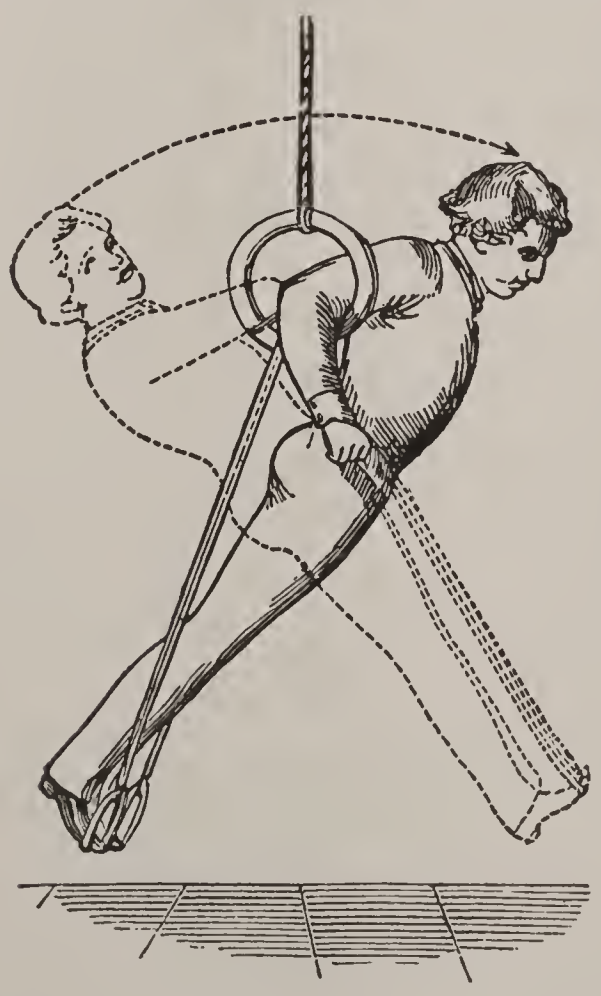


FIGURE 8.

effected without upsetting the whole structure.

It is our purpose to present the uses of the swing and stirrups, for they certainly possess the advantages of all other gymnastic apparatus. We would not underrate the value of other apparatus and modes of exercise. We offer the swing and stirrups, not as a full response to the public demand, but as the most complete "multum in parvo" in the gymnastic field, and as most admirably adapted to the wants of those who cannot avail themselves of the advantages of a gymnastic institution. To all such it is a God-send.

It is comparatively easy to devise gym-

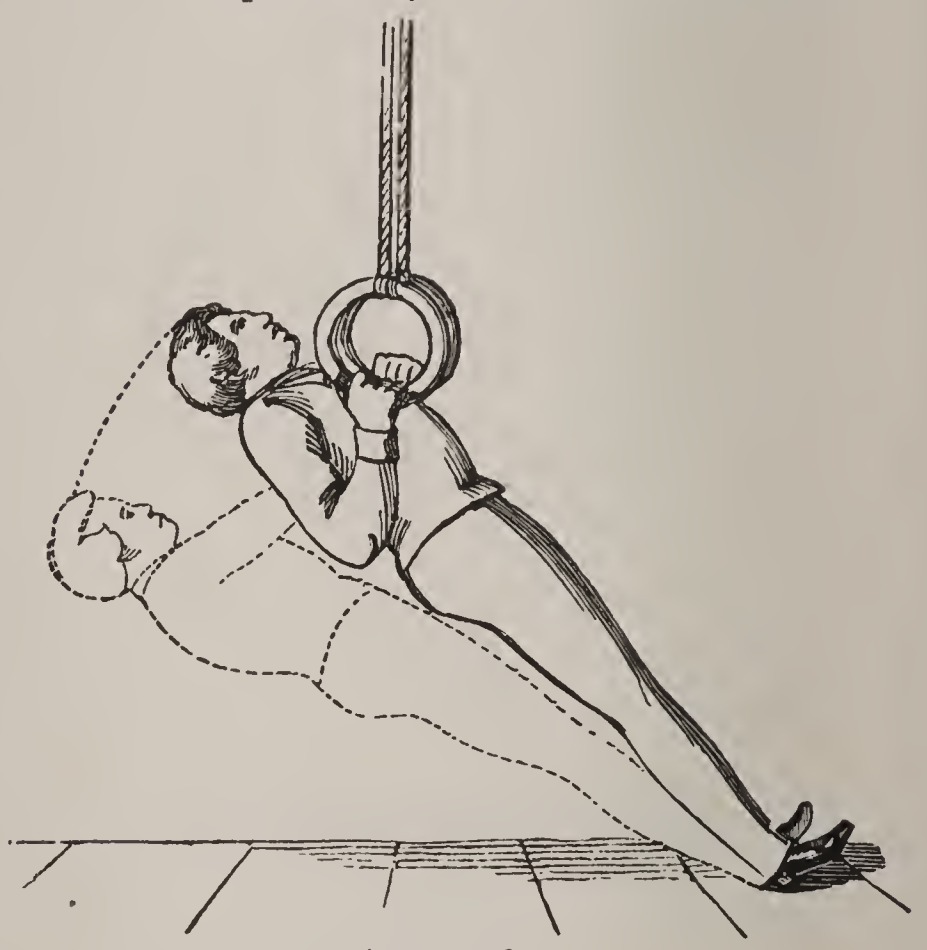


FIGURE 9.

nastic exercises which shall interest a social class, enlivened by music. But what shall those do, who, finding it inconvenient or disagreeable to visit the gymnasium, would cultivate muscle and vigor at home? In the absence of social stimulus and music, the exercises themselves must possess peculiar fascination. If, in addition, they bring every part of the body into varied action, giving the left arm, shoulder—the entire left half of the body as much and as varied exercise as the right, we should have the model home gymnastics.

The swing and stirrups meet these demands more successfully than any other apparatus yet devised. While the first exercises of the first series are simple enough for children, the last exercises of the last series are beyond the reach of all except those who have favorable composition and are very much in earnest. For clergymen, ladies and many others, who would carry on the work at home, this invention is the most complete means imaginable.

Two large hand rings are suspended from the ceiling by ropes, which, running through padded hooks, are carried to the walls. Two other ropes extend from the walls directly to the hand rings. A strap with a stirrup is placed in either hand ring. By a simple arrangement on the wall the hand rings are drawn as high as the performer can reach, or let down within a foot of the floor; or at any altitude they can be drawn apart to any distance. The distance between the stirrups and rings can be likewise varied.

The usefulness of the swing and stirrups depends upon the facility with which these changes can be made. The rings must be raised, let down, drawn apart, the stirrup straps changed, or removed altogether from the rings, each and all with a single motion of the hand and in a moment; there are various simple mechanical contrivances by which these multifarious changes can be made. An ingenious mechanic can scarcely be at fault. We will suggest that in splicing the ropes into the rings the splice should be long and drawn close; else giving way, an unpleasant surprise may occur; the ropes should run through strong, padded hooks at the ceiling, which are fastened on the upper side of the timber with thick nuts; the fastenings on the wall must be made secure.



FIGURE 10.

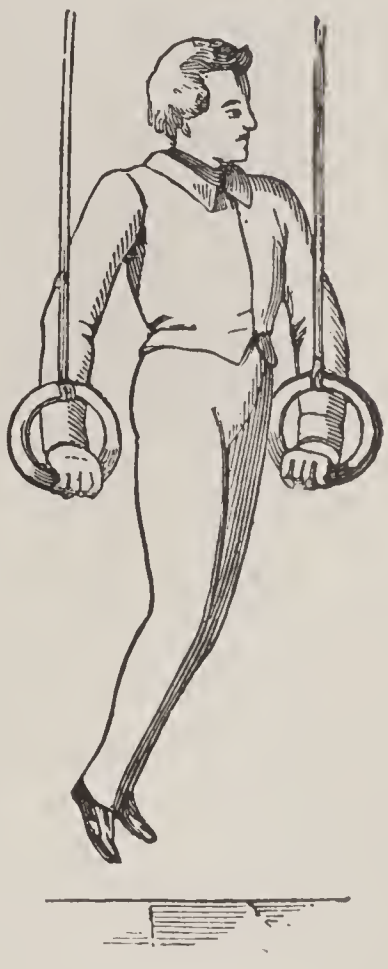


FIGURE 11.

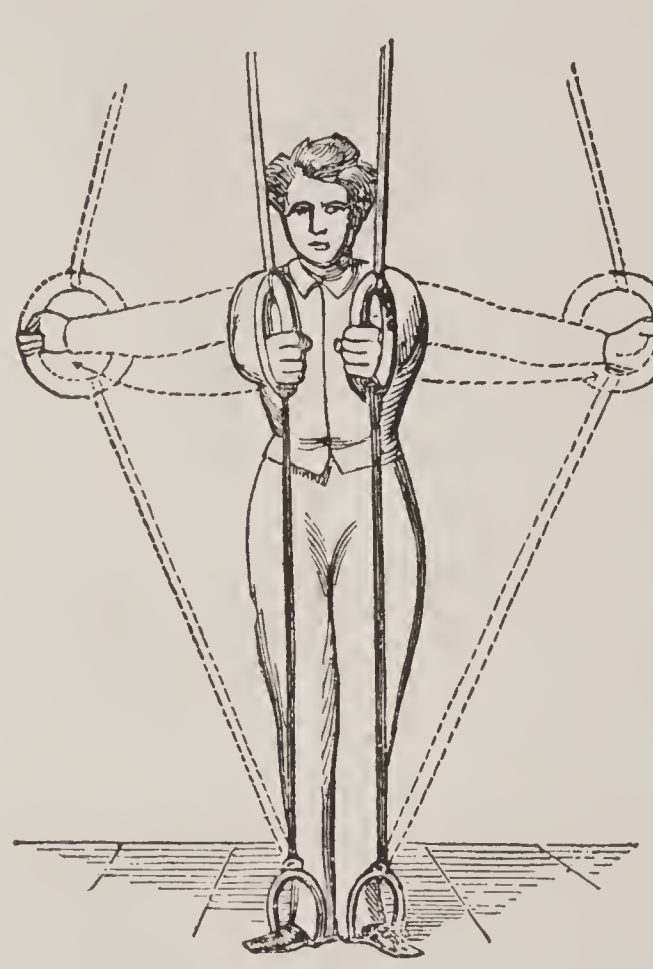


FIGURE 12.

The ropes with which the rings are separated should be armed with wrought iron snap hooks, which can be caught into wrought iron rings that have been firmly lashed into the suspension rope at the point where it connects with the hand ring.

The stirrup straps must be of very strong white leather, with edges so rounded that the pants will not be worn. In shortening

the straps a buckle should not be used, for in removing the straps from the hand rings much time would thereby be lost; nor should a simple hook be employed, as the leather is liable to give way and the hook to slip out.



FIGURE 13.

A brass H, with one side sewed into the end of the strap doubled, and the other slipped through slits in the body of the strap, is a perfect thing. With this simple contrivance the strap can be altered or taken out altogether in a second, and can never give way. The stirrups should be very strong, with serrated bottoms, and fastened into the ends of the straps with strong sewing and copper rivets.

The swing and stirrups cannot be put up in an ordinary gymnasium; the ceiling is too high. The best height for the ceiling hooks is twelve feet; a ceiling as low as eight feet will do. The apparatus can be used, however, in a gymnasium, or in an open yard, by the erection of a simple framework. If suspended in an ordinary gymnasium, from a ceiling eighteen or twenty feet high, a large number of the most valuable exercises cannot be performed advantageously.

Upon a close examination of the swing and stirrup exercises, the conviction will be forced upon all, that by no other means can such a variety of valuable exercises be reached.

A vain boasting over muscular strength is vulgar. We regard with disfavor the cultivation of mere strength, without a noble carriage, freedom, security, agility and grace. Still less do we approve of a mere display of feats. But what thoughtful person can reflect upon the objects of human life, without seeing that not only is the highest development of the muscular system a great advantage to those who follow mechanical occupations, but of vital importance likewise to

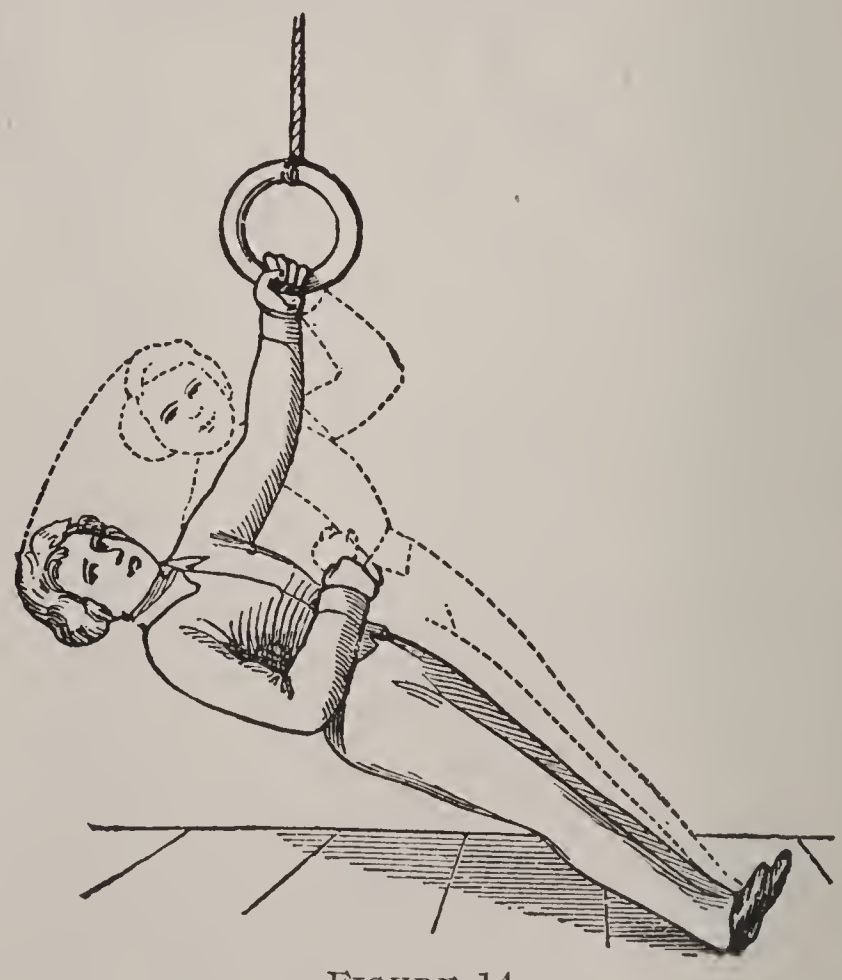


FIGURE 14.

those who fill the ranks of intellectual life, and who require, as a condition of success, good health and strong vitality.

Only a *whole* man is capacitated to perform in the best manner the tasks of life.

Is it not an aim worthy our highest efforts to develop our whole being to its fullest capacity?

This universal development is especially provided for by the union of the stirrups with the rings, from which results an infinite combination and variety of exercises. The gymnasium receives in this apparatus a larger circumference than is offered by all other gymnastic utensils combined.

The muscles of the lower part of the body, and the nape of the neck, are more thoroughly trained than by any other means. The extensor muscles of the fingers, hands, arms and legs, which are never brought into vigorous play with other gymnastic apparatus, enjoy, in the use of this apparatus, full play. The rotary and diagonal movements of the muscles, which are particularly effective in the production of symmetry, figure prominently.



FIGURE 15.

These exercises derive great advantage from the fact that the points of support as well as the points of grasp are moveable, whilst ordinariiy these points are fixed. The advantage is, that these points are fixed through a varied action of the muscles. This compels an almost infinite multiplication of the direction and manner of muscular exertion.

The pupil must observe the gradual method of advancing. Beginning with the most simple, and at last reaching the most

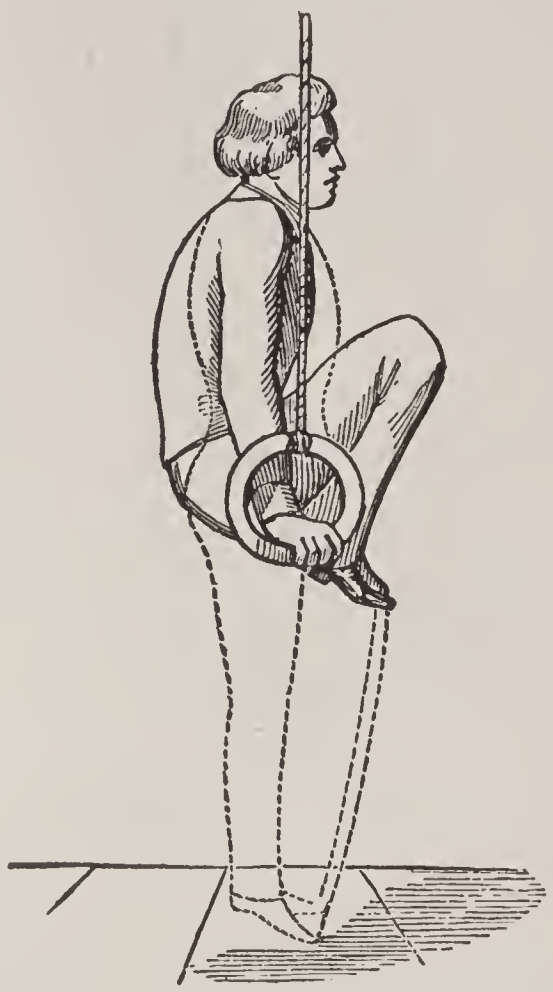


FIGURE 16.

difficult. He must proceed from exercise to exercise, from degree to degree, from series to series.

Figure 1.—SHOULDER SWING, *forward and backwards, four, six or eight times.* Rings at the height of the head. The swing mo tion is sustained from the shoulders.

Figure 2.—HAND SWING SIDEWISE, *four, eight, or twelve times.* The swinging which is sidewise, is carried on by efforts of the legs and arms. This exercise operates happily by enlarging the chest. The feet follow the dotted line; the toes rest on the floor, then with a spring the motion is reversed.

Figure 3.—STANDING INCLINATION SIDEWISE, *two, four, or eight times.* Rings and grasp the same as in the last. The inclina-

tion of the body is exactly to the right and left alternately. The arms remain in the position shown. The body remains inflexible.

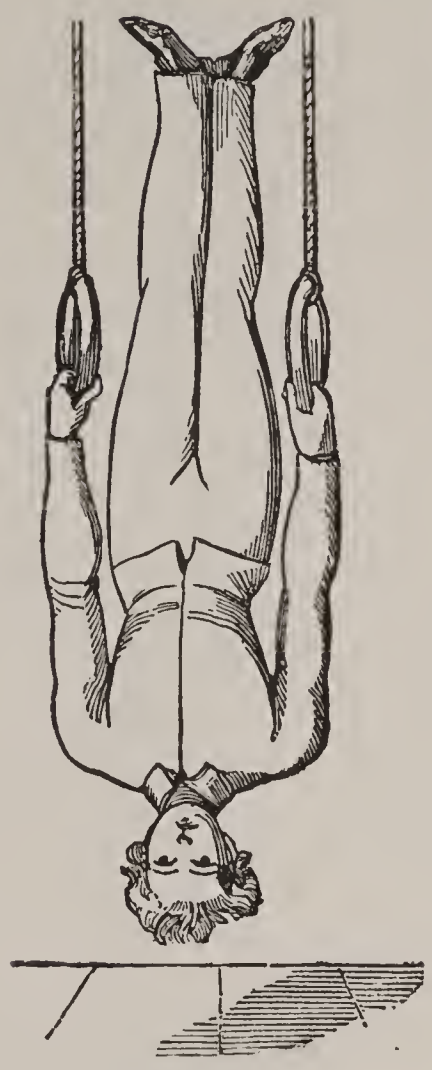


FIGURE 17.

Figure 4.—CHEST STRETCHED POSITION, *during two, four, or six inhalations.* Rings one foot from the floor. Grasp from the outside as shown in the cut, arms exactly perpendicular. Legs straight, supported on the points of the toes. The rope must touch the shoulder. One hand can be lifted, and the weight of the body supported by the other hand.

Figure 5. — LEG SPREADING, *from the Shoulder Hang.* Position as shown in the figure. The legs are thrown out exactly sidewise and with great vigor. The position of the feet when in contact and when separated is well shown.

Figure 6.—KNEE LIFTING, *from the Shoulder Hang.* Rings in the same position. In this exercise the hands seize the ropes close above the rings. By this means, a more concentrated exercise upon the corresponding muscles of the legs is secured. The knees are drawn up as high as possible. Those who are muscular and flexible, can carry the knees as high as the chest.

Figure 7.—HORIZONTAL LEG RAISING, *from the Shoulder Hang, two, four or six times.* Rings, hands and body in the same position as in *Figure* 6. The legs are kept perfectly straight, and they are raised as shown in the figure where they are held for a moment.

Figure 8.—STIRRUP STANDING INCLINATION, *in the Elbow Hang, four, six, or eight times.* Standing in the stirrups, the rings are placed as high as the shoulder. Arms as seen in the cut. The body is thrown vigorously forward and backward. A fine development for the chest, and helpful for respiration.

Figure 9.—HALF LYING, WITH LIFTING BY THE ARMS, *two, three, or four times.* Rings as high as the chest. Seize the rings from the outside with the support grasp, and bring

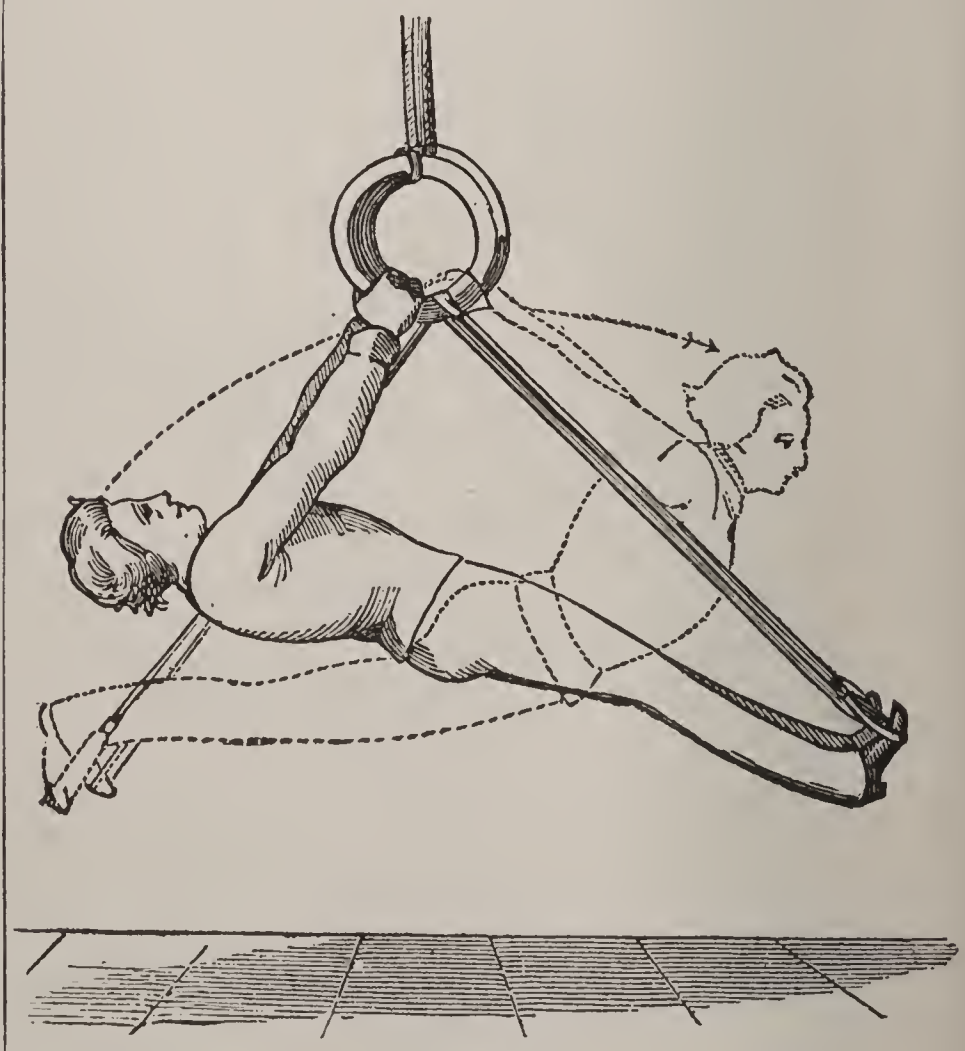
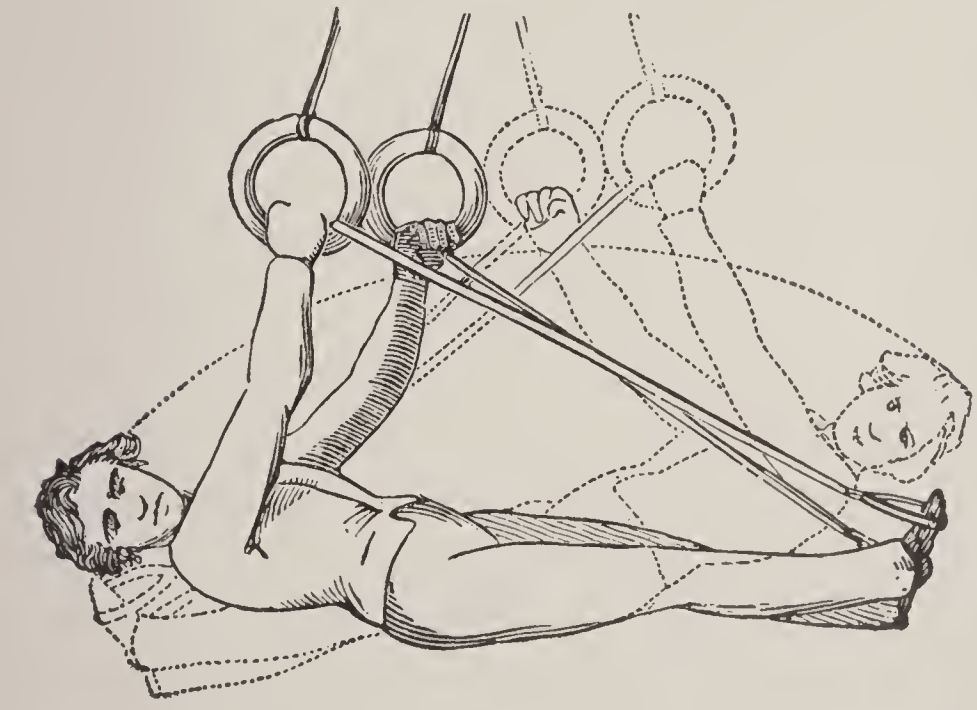


FIGURE 18.

the body beneath the rings in an almost lying down position. Keep the body and neck in a straight line rigidly. Now draw the chest up to the rings, and let the body down again to the full length of the arms.

Figure 10.—Angular Support Hanging, *during two, four or six inhalations.* Rings as high as the shoulders. Seize the rings from the inside with the support grasp, and spring into the position between the ropes, keeping the arms straight ; then let yourself slowly down into the position of *Figure* 10. Head erect, chest thrown well forward, back straight, legs close together.

Figure 11.—Body Turning in the Support Hang, *one, two or three times.* Rings at the waist. Seize the rings from the inside with the support grasp. The straightened body sustained by the hands is turned from side to side,



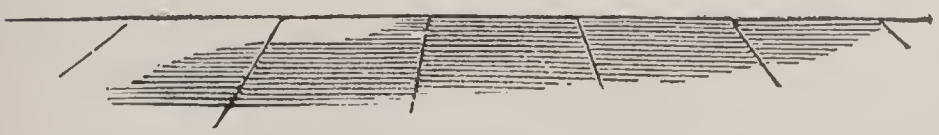


Figure 19.

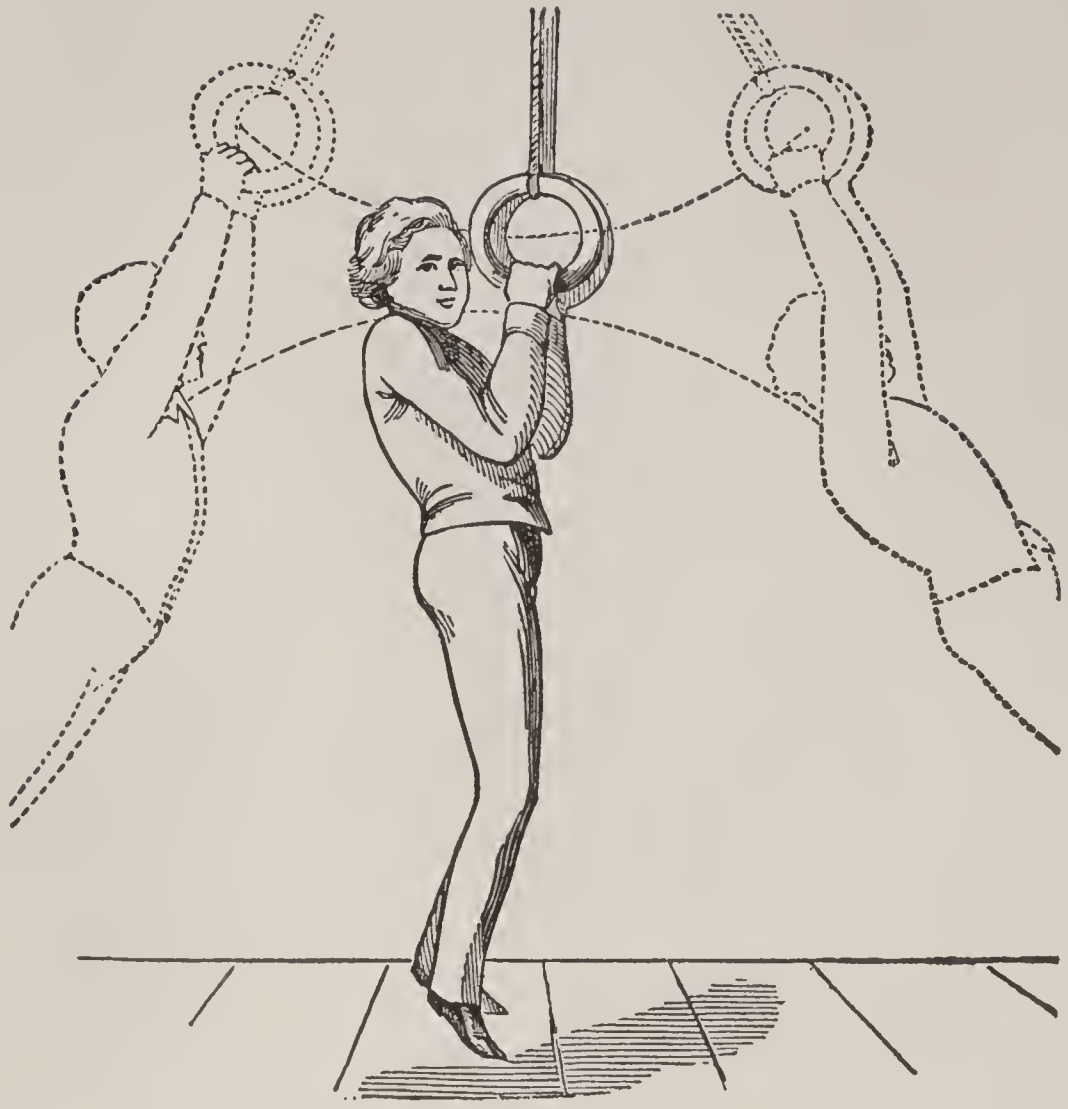


Figure 20.

the upper part one-eighth of a circle and the lower part one-fourth of a circle at each swing or turn.

Figure 12.—Chest Expanding, *two, four or six times.* Rings as high as the chest. Adjust the stirrup straps so that when the rings are held out at arms length from the body the stirrups will touch the floor. Put the feet into the stirrups as far as the heels. Take hold of the rings with the support grasp from the inside. Stretch out the arms in front of the body, and then keeping the arms straight, carry them backward as far as possible. As soon as the straps are drawn tightly, the feet begin to offer a point of resistance, which may be increased to any desired degree. The body remains firm with heels upon the ground.

Figure 13.—Twisting Swing, *one, two or three times.* Standing in the stirrups, the rings should be as high as the waist. Take hold of the rings from the inside

with the support grasp, and rotate the body on its own axis from side to side until you reach a semicircle. As the ropes cross each other, the straps are made to cross each other likewise, through the action of the muscles of the legs. The rotation ought not to go beyond a semicircle, else it may become irregular and injure the apparatus.

Figure 14.—Drawing Up by One Arm in the Back Stretching Position, *one, two or three times.* Rings as high as the head, though if the rings are placed a little lower, the action of the muscles will be greatly intensified. *The two heels must rest on the floor*, with the body nearly horizontal, and the arm straight. The body is to be kept straight and stiff, while with the one arm it is drawn up as near as possible to the ring, and then it is let down as slowly as possible.

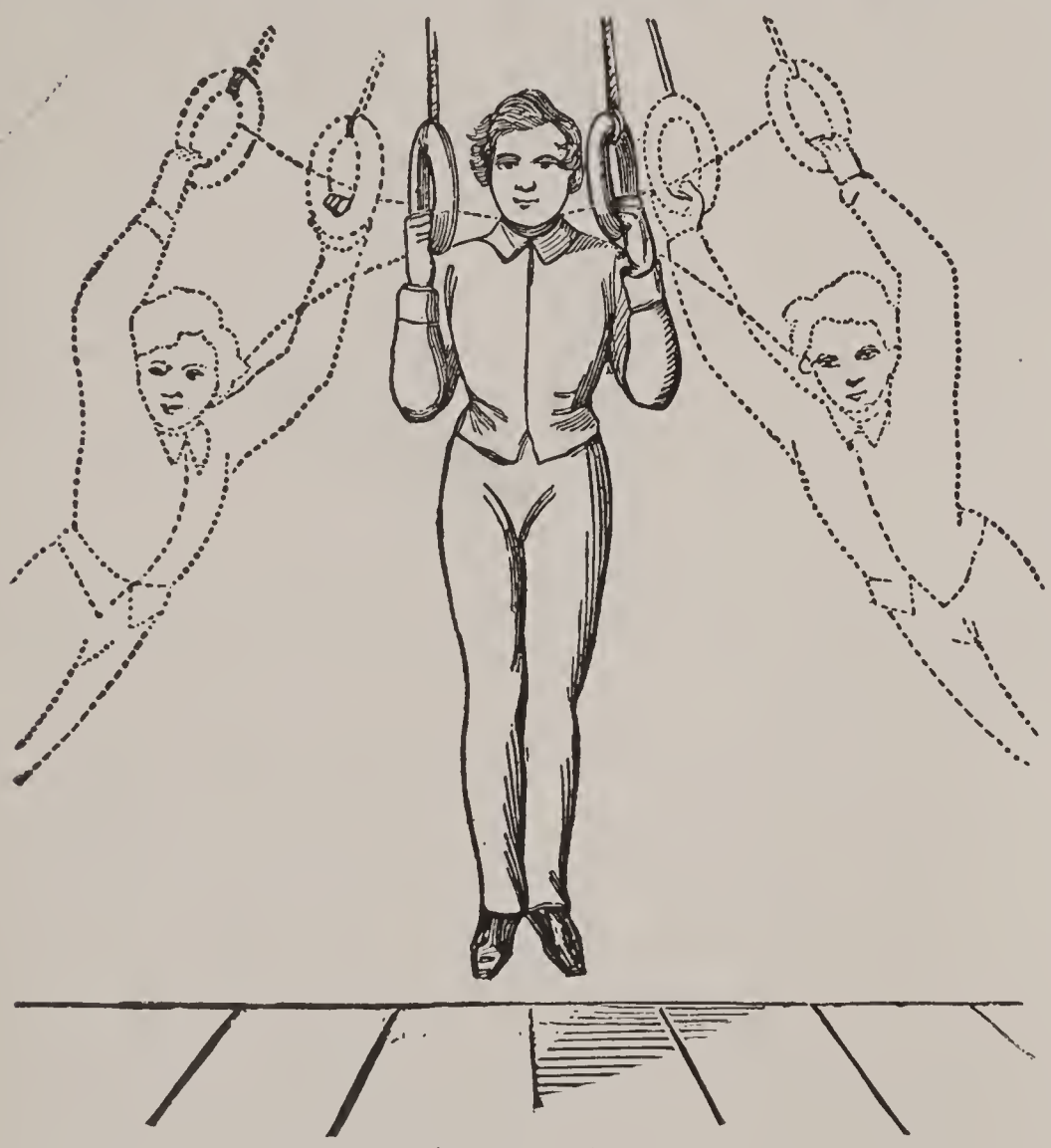


Figure 21.

Figure 15.—Hand and Foot Hanging, *during one, two or three inhalations.* Grasp the rings as shown in the figure; throw the body forward, raise the legs and insert the feet in the rings; hang a moment, resume first position and repeat.

Figure 16.—Knee Raising in the Support Hang, *three, four or five times.* Stand between the ropes, and grasp the rings from the inside, as seen in the figure. Raise the knees as high as possible, then thrust them down again with great force.

Figure 17.—Head Downwards, Feet Free, *during four, six or eight inhalations.* Grasp the rings tightly, thrust the feet upward. The body is kept suspended between the ropes as indicated in *Figure* 17. Care must be exercised that the rings do not swing in the slightest degree.

Forward and Backward.

Figure 18.—Fall Hang in the Stirrups, *four, eight or twelve times.* Grasp the rings and swing forward and backward. This is partly accomplished through an upward action of the elbow, and partly through the turning of the rings, the firm grasp upon which is never relaxed. When going forward, one must pay close attention to the position of the elbows, as the arm and hand rotation may be a pronatory instead of a supinatory movement, in which case the front position would be entirely different from the one intended. This latter point is important.

Figure 19. — The Hanging Circular Swing, *twelve times.* The pupil suspends himself, as in the figure, draws his body up by the arms, turns in a sidewise direction, both rings before the chest, accompanied by an inclination of the whole weight of the body in that direction. Thence he goes into the same position on the other side.

Figure 20.—Forward and Backward Swing with Drawing Up, *two, three, or four times.* The rings, at the highest grasp position, are seized from the outside with the hang grasp, and the pupil swings back and forth. In either direction, when the centre of the swing is reached, the body is drawn up by the arms, and at each end of the swing it is let down again to the full length of the arms.

Figure 21.—Sidewise Swing with Drawing Up, *two, three, or four times.* Position and grasping same as in *Fig.* 20. The swing takes place in an exactly sidewise direction. As before, the body is drawn up as near as possible to the rings at the centre of each swinging, and let down again at the end

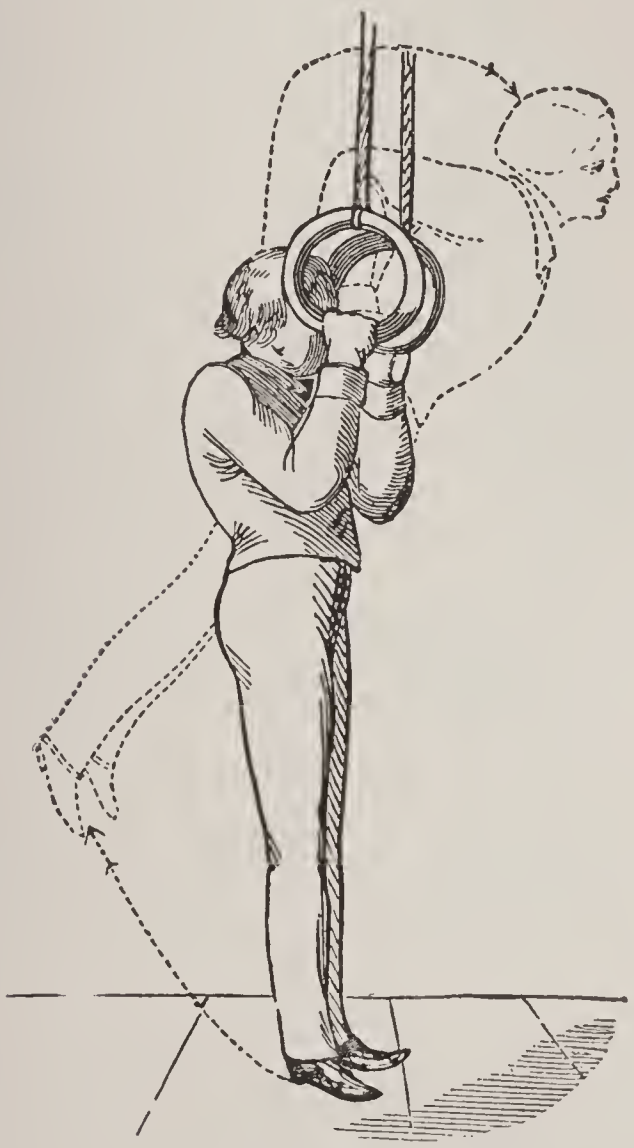


Figure 22.

points. On account of the sidewise position, the outer arm cannot attain the same straight attitude as the inner arm.

Figure 22.—Drawing Up and Support Changing, *one, two, or three times.* With rings a little above head height, one goes from the drawn-up hang position into the angular support hang, and from that back again. This is achieved without touching the floor. The rings must be turned round



Figure 23.

during the exercise, on account of the changes in position which naturally occur between the hang grasp and the support grasp.

Figure 23.—Drawing Up Hang with One Arm, without Touching the Floor, *one, two or three times.* Seize the ring at the highest grasp point, and go over into the hand hang, with one arm stretched at full length. Now draw up the body until the arm is at a right angle. Both upward and downward the movement should be slow. Then alternate.

Figure 24.—Forward Leap with One Leg. Position the same as with other forward leaps. The body as close as possible to the cord. One leg is bent at the knee at

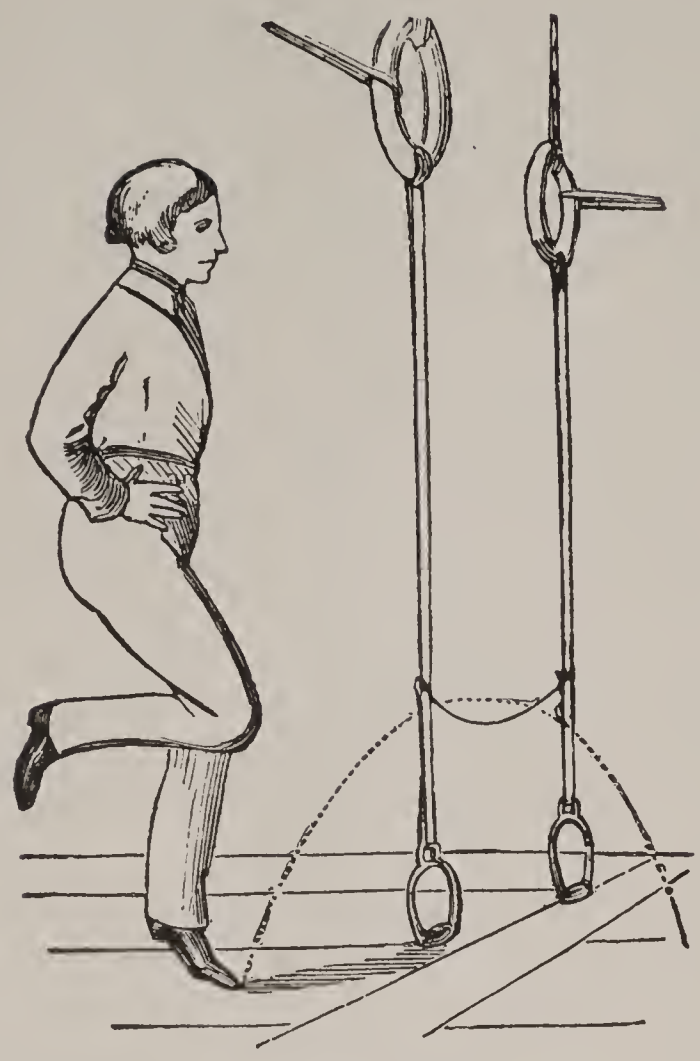


FIGURE 24.

a right angle, while the other executes the leap. Alternate.

Those who have been troubled with lame knees, must practice this exercise with care.

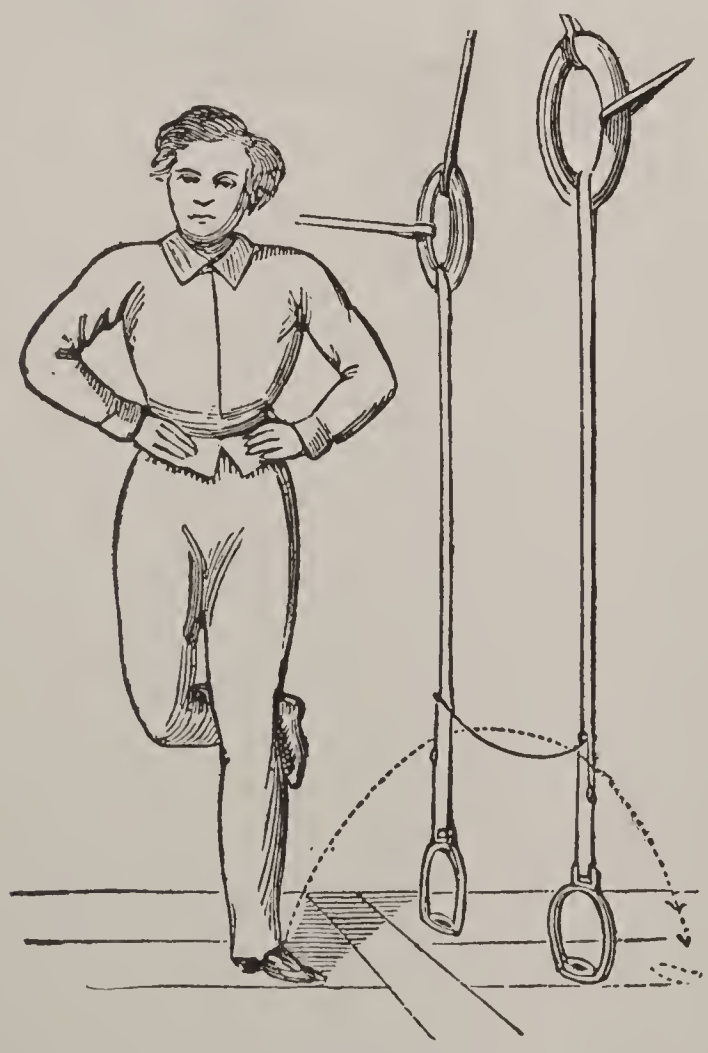


FIGURE 25.

As there is a very severe exercise of the knee joint and the parts immediately surrounding it, and as a lameness in those parts is apt to be a serious affair, too much caution cannot be exercised.

Figure 25.—SIDEWISE LEAP WITH ONE LEG. One goes over in a sidewise direction, from a sidewise position, the leg that makes the leap being the one nearest the cord. Alternate the sides.

Figure 26.—BACK TWISTING LEAP. Dur-

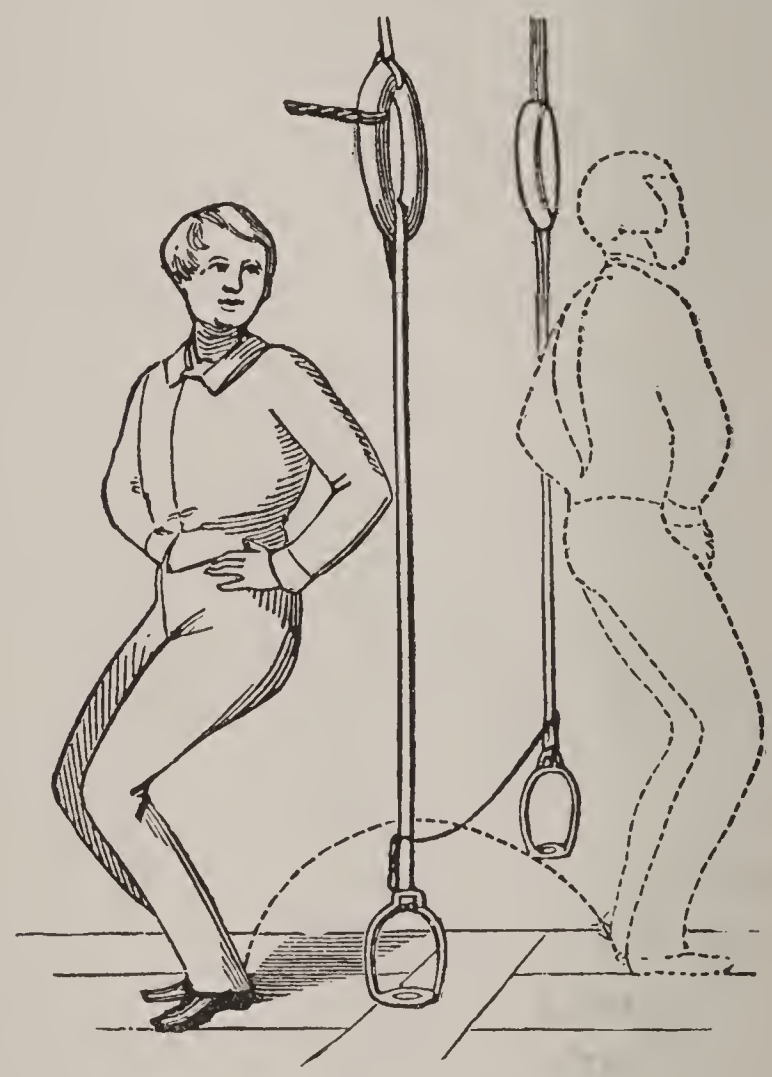


FIGURE 26.

ing the leap turn half round and come down facing in the opposite direction. Alternate with turning the other way.

Figure 27.—OPPOSITE DOUBLE LEAP. Execute the forward leap, and immediately follow it by the backward leap.

This leaping forward and backward over the ropes is, on the whole, perhaps the hardest of the leaping exercises. There can be no doubt of it, if you have had sufficient practice to enable you to leap about as high backward as you can forward. The faithful

gymnast will be astonished at his improvement in the backward leaping.

Beginning with the cord one foot high, he soon rises to two feet, then to three, and perhaps to four feet by the end of the first year. A much higher point than this even may be reached by those who, beginning with a fortunate composition, give a few moments every day to efforts in this department. Persons with hernia, unless well protected with a superior truss, must exercise great caution in the backward leap.

Figure 28.—Arm Suspension. Grasp the rings, as shown in the figure ; thrust the head forward, bringing the body to a suspended,

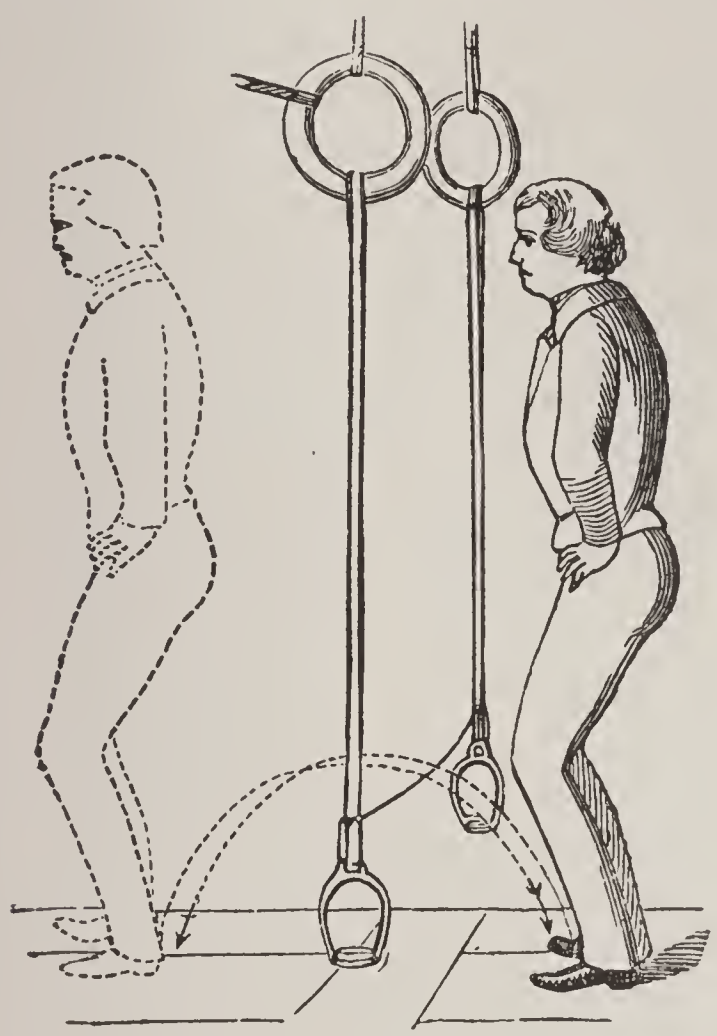


Figure 27.

horizontal position ; keep the legs straight. Be careful not to strain the muscles, by remaining suspended too long. Although one of the most difficult exercises, this is one of the best.

The student of gymnastics must bear in mind that only by patient endeavor can he gain the best results. He should never practice when his muscles feel stiff, or when by reason of other occupations, he has become wearied. He should feel when he goes to his practice as the boy does when he goes to his play. It is something which he is to enjoy and which is not to be made a burden or a toil.

Make a study of this matter of health, for it means happiness, success and long life.

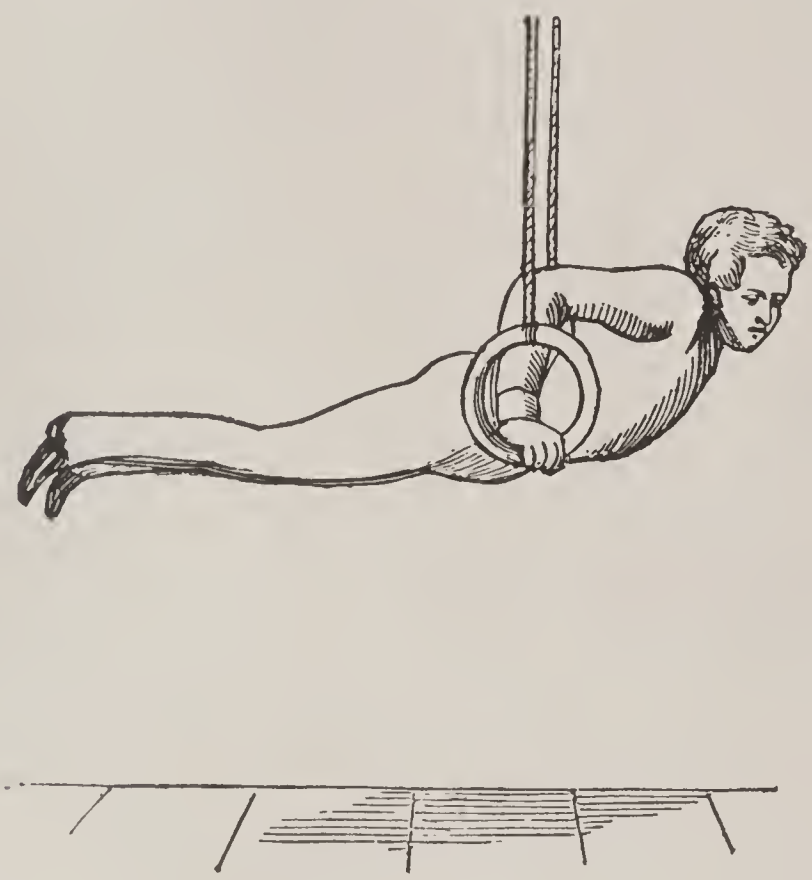


Figure 28.

Cultivate a physique which will not be constantly conveying to others the impression that you are going into a decline. Athletic sports with many are a hobby and not always are they carried on from the highest motives. Health, strength, endurance, fitness of mind and body for the pursuits of life are to be kept constantly in view.

What is said in the foregoing pages concerning good health and how to preserve it, is worth the attention of every one, and if you are stimulated in this noble pursuit, and have had the means suggested for reaching these desirable results, it will be far better than as if a fortune had been laid at your feet, without the knowledge which you have here gained.

What to do in Emergencies

MEANS and ways to secure resuscitation from heavy electric shock have at last been discovered as a result of investigation by the Academy of Medicine in Paris. The appalling number of accidents claiming so many lives of brave workmen and dutiful officers in the service of electrical industries and institutes has long been a subject of public discussion.

Finally the minister of public works sought to solve the mystery by commissioning the Paris Academy of Medicine fully to investigate the matter, and try and devise some practice for saving the lives of persons affected by electric shock. The results have been most gratifying.

Take one instance: The foreman of the electric company at Rochester, N. Y., received through his body a 3,000-volt current. To all appearances he was instantly rendered lifeless, but three other workmen, acquainted with the method of resuscitation here described, saved their comrade by prompt action.

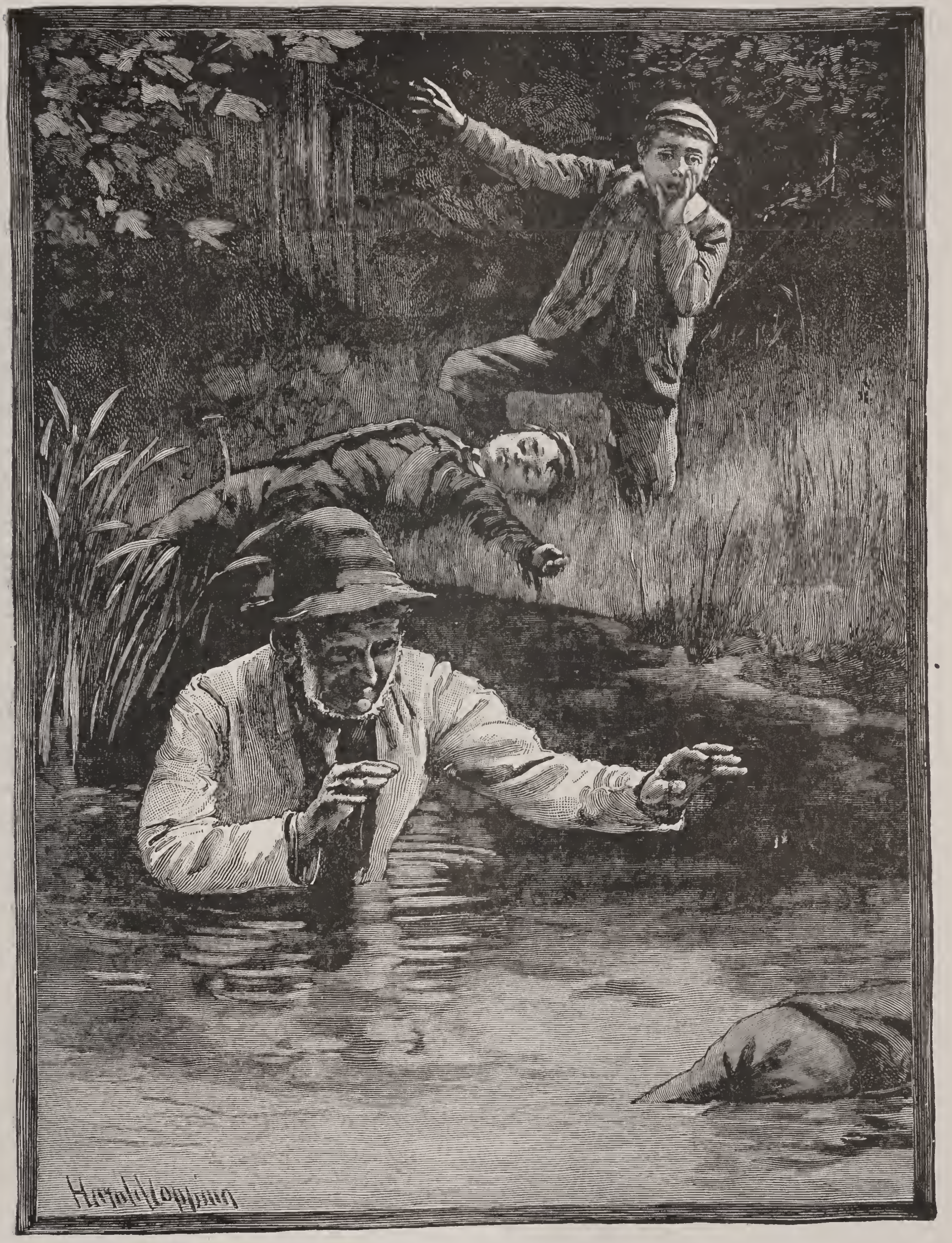
The formula for reviving the victims of electric shock is this: A person so disabled should be treated like one drowned. These are the rules, which not only workmen in electrical industries but every citizen and every friend of humanity should know by heart:

Above all, break the contact with the conductors. If the current can be instantly cut off so much the better. If not, lose no time in telephoning or sending, but apply yourself directly to the body that must be removed.

Important Directions.

In doing so touch not the victim on face or hands, or any naked part of his body. You may try to lift him up by the coat-tails or after throwing a blanket or coat around him. Mind, they must be dry. Also remember that dry wood is a non-conductor. You must use a stick to draw the body over to one side or to hold back a live wire. To lift the victim off a crossbar pass a piece of lumber under his heels and raise him up. The same should be done if the body is in contact with the ground. His feet should be raised from the earth immediately. Any piece of wood or furniture or cloth will do.

The body should be carried into the open



A RESCUE FROM DROWNING.

air or a room where air has free access. All not directly engaged in the work of rescue should be instantly dismissed from the place. The body must be placed upon the back, after the shirt and collar have been loosened. Raise the shoulders and let the head fall back.

Then begin the work of restoring respiration; that is, seize both arms and draw them energetically over the head, bringing them nearly together and holding them in that position for a couple of seconds. These movements having expanded the chest and pressed air into the lungs, carry the arms down to the side and front of the chest, doubling them up at the elbow, in order to expel the air from the lungs. Continue in this for at least an hour, unless respiration sets in before.

To Induce Breathing.

A second assistant should at the same time seize the tongue of the victim—it is well to protect one's finger with a piece of cloth or a glove for this process—and draw it out while the arms are extended over the head, allowing it to recede when the arms are pressed against the side of the breast. Both these manœuvres should be carried on with as little interruption as possible. Twenty times per minute is not too much.

If the victim shows a tendency to clinch his teeth, keep them apart by placing a piece of wood or anything handy between them.

It is also advised to rub the body with brushes, brooms and cloth in order to promote the circulation of the blood.

Do not administer stimulants unless a medical person pronounces it safe to do so. When possible procure a tank of oxygen gas from the nearest drug store, and after improvising a cone place the tube over the mouth and nose while the gas is issuing. It is a powerful stimulant to the heart's action under certain conditions, and will aid respiration.

Similar methods of resuscitation should be employed in cases of stroke by lightning.

DROWNING.

Drowning is, unfortunately, a common accident. Four or five minutes under water, and life is gone. There have, however, been one or two exceptions to this rule, and therefore respiration may be attempted after a longer immersion. The old plan of holding a person up by the heels was very reprehensible, and so was rolling him on a barrel.

The clearing of the mouth of phlegm, then a hot bath, or brisk friction, are very well as far as they go; their inefficiency being their great drawback. The passing of ammonia to and fro under the nostrils is unobjectionable at any rate. Artificial respiration is the most effective measure. The simplest form is to press upon the chest and abdomen at intervals, leaving the natural elasticity to suck in some air each time.

Dr. Marshall Hall's plan was to roll the body on its face and to excite artificial respiration by pressure along the back, or rolling the body over on the side; doing this so as to imitate, in time, the natural respiration.

The method adopted by the Royal Humane Society is that known as Dr. Silvester's. It is carried out in the following way. The patient is laid on a flat surface on his back, with the head and shoulders slightly raised on a pillow. His arms are then to be grasped just above the elbows, and to be drawn gently and steadily upwards until they meet above the head, in which position they are kept for two seconds; they are then to be turned downwards, and to be pressed for

two seconds gently and firmly against the sides of the chest.

These movements are to be repeated deliberately about fifteen times in the minute, until natural efforts at respiration are induced, when they are to be discontinued, and the ordinary means to promote circulation and warmth had recourse to. These last mean friction, hot spirits and water, and a warm bath where practicable.

When a person is drowning and those around cannot swim, one person might do his best to reach him while another held him by the ankles. If the accident has occurred on ice, a stick laid across the opening by which the drowning man can support himself, is of advantage till more substantial aid comes. But the loss of temperature will not permit the immersed person to hold on long.

ACCIDENTS BY FIRE.

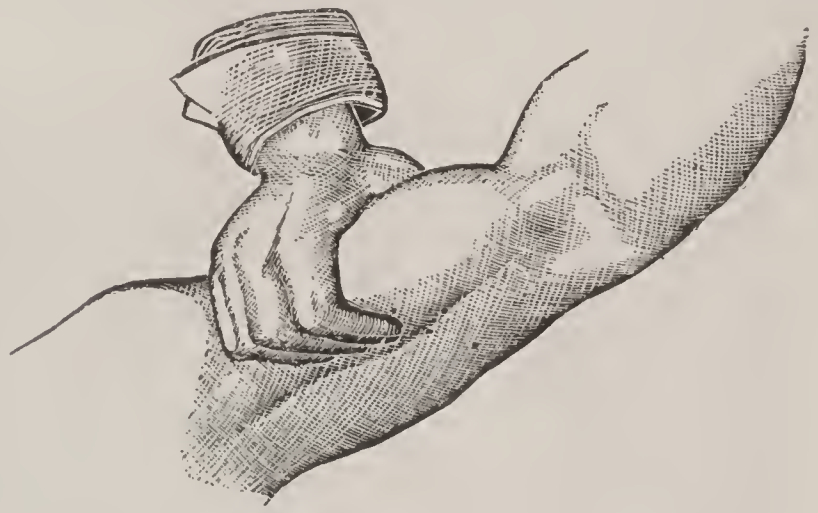
Fire is a source of danger, and is very destructive to life at times. Spontaneous combustion of the human body when saturated with alcohol is a myth, though perhaps the alcoholized body does burn more readily than one free from inflammable fluid.

When a lady is on fire, she should not, and ought not to be permitted to run; that fans the flames amazingly. She must be laid down, and rolled up in the nearest woollen article,—rug, coat, or blanket. Such wrapping up in a non-inflammable article is a most effective method of extinguishing the flames. Immersion in water is, unfortunately, rarely practicable.

HEMORRHAGE.

The word hemorrhage, of course, means the escape of blood from any vessel in any part of the body, but here we only propose to speak of those bleedings which occur as a consequence of some accidental cutting or rupture from some external cause, of a blood vessel, in other words, those cases which occur in "minor surgery."

Hemorrhage is of frequent occurrence and as a rule requires prompt action and presence of mind in those present, to prevent it from becoming serious, and even imperilling life itself. The means of preventing and



METHOD OF GRASPING THE ARM.

suppressing the flow of blood from an artery that has been cut or broken in any way are few and simple.

For temporary means to stop bleeding from any artery in the arms or legs, a handkerchief or something of the kind passed around the limb above the point of injury, through beneath which a small stick, nail or wire is passed and then twisted around until it produces a good degree of pressure, will stop almost any case. This is an always present substitute for the tourniquet used by surgeons in like cases.

Another means, always present, is direct pressure by means of the hands. On the upper extremities the circulation may be readily arrested with the fingers, by grasping the arm as shown in the above cut.

If their points are so applied over the artery, a very slight force is sufficient, and any part of the arm above the elbow may be selected, although that shown in the cut is usually most convenient. This fact should

be impressed on the mind of all, especially the young of both sexes, as it will perhaps be the means of saving life in case of serious hemorrhage.

If the accident should occur in the lower extremity, resort to the handkerchief and stick may be had recourse to, or the flow may be effectually stopped by making pressure on the artery near its passage from the body by means of the thumbs, applied as shown in this cut.

If the pressure is made much lower down on the leg, much additional force is necessary, and even then, if the thigh be fat and muscular, it may not always be entirely successful; but if this force is used as here directed and illustrated, there need be no fear of fatal hemorrhage, even if all the arteries of the leg should be severed.



PRESSING UPON THE ARTERY.

As soon as possible the end of the bleeding vessels should be secured by tying by means of any small, strong cord, as a thread of silk or strong spool cotton. We wish it to be distinctly understood that we do not mention these means as being superior to the means within the reach of the well prepared surgeon, but only as effectual means which will be present in any sudden emergency, and so simple that any one may understand and apply them readily.

FAINTING.

Fainting is alarming rather than dangerous. The person should at once be laid flat. If left alone they fall down, and so the horizontal posture is secured. Fainting persons should never be propped up in a chair or on a couch, but laid flat. In fainting, or syncope, the heart fails to propel the blood to the brain, and unconsciousness follows.

But if the person be laid down and the head is brought to the level of the rest of the body, the blood circulates through the brain as readily as elsewhere, and the person recovers from the faint.

SUNSTROKE.

Sunstroke, contrary to the usual impression, is not in all cases due to exposure of the head to the direct rays of the sun. Statistics show that prostration from the effects of heat may occur under shelter, in the shade, at night, or even in persons who have not been exposed to the sun for days before. Intense heat need not be solar, but may be artificial Since the human body can cool itself much more readily in a dry than in a moist atmosphere, it may be expected to resist the severities of a dry, overheated climate more easily than the oppressive closeness of a damp and muggy one.

For this reason sunstroke is much more infrequent in the dry belt of the Texan prairies than in the lowlands of India or upon the sea-coast. For the same reason, too, it is especially prone to attack indoor workers in confined, moist factories, and notably those who labor in laundries and sugar-refineries.

Sunstroke appears to be decidedly favored by intemperance, by want of acclimatization, and by debility following fatigue in a heated atmosphere. Occupants of badly ventilated sleeping apartments appear to be oftener affected than those who sleep in purer air.

It is generally thought by non-professional persons that the symptoms of sunstroke come on without any warning whatever. In most cases, however, it is preceded by pain in the head, wandering of the thoughts or total inability to think at all, disturbed vision, irritability of temper, sense of pain or of weight at the pit of the stomach, or inability to breathe with the usual ease and satisfaction.

These symptoms become more and more marked until insensibility is reached, preceded sometimes by delirium. The skin grows very hot, and usually very dry, but when not dry is covered with a profuse perspiration. The face becomes dusky, or, as the saying is, blue. Breathing becomes rapid and short, or slow and sighing. The action of the heart, as felt by the hand placed over it, is weak and rapid and often as tremulous as the "fluttering of a bird."

In many instances, from what is popularly termed the commencement of the attack until it ends in death, the patient does not move a limb, nor even an eyelid. The gradual failure of respiration interferes with the natural purification of the blood in the lungs, a fact speedily attested by the livid, purplish appearance of the surface. In most cases of sunstroke, accordingly, death comes on gradually by arrest of respiration, such arrest being without doubt due to direct paralysis of the respiratory centres by the excess of heat.



'N THE SICK-CHAMBER.

A person suffering from sunstroke should at once be carried to a cool, airy spot in the shade of some wall, or perhaps to a large room with a bare floor, or, as is sometimes

better, if no sunlight interferes, upon the pavement of a back yard. Unnecessary by-standers must be kept at a distance, for in this as in every other accident, the patient needs all the pure air to be had. His clothing should be at once gently removed, and he should be placed upon his back with his head raised a couple of inches by a folded garment.

His entire body, and particularly his head and chest, should then be profusely dashed with cold water. In preparation for this step, a messenger should be despatched for a good supply of ice, and several buckets of ice-water should be made ready for use as rapidly as possible. The ice-water must not be sprinkled over the patient, but dashed against him in large bowlfuls. While one person prepares the ice-water, and another uses it, a third and even a fourth may employ themselves in rubbing the surface of the patient briskly, each with a handful of cracked ice enclosed in a towel.

To Reduce the Temperature.

The purpose of these measures is to reduce the temperature of the body to something like a natural standard. When the decline in heat is noticed, the cold applications should cease, and the patient should be carefully removed to a dry spot, where the entire surface of his body should be dried with towels. If any tendency toward a return of the high temperature should manifest itself, as is sometimes the case, even after the restoration of consciousness, it must be met at once by a renewal of cold applications. A second rise in temperature need not excite surprise when we reflect upon the amount of superheated blood within the body not yet exposed to the influence of the cold applications.

Artificial respiration must be resorted to as soon as the heated condition of the body is overcome, and continued until natural respiration returns. (See directions under "Drowning.") The dashing of cold water over the chest and face is a useful means of encouraging a return of the suspended function of breathing, but the mechanical methods are best relied on in the main for this purpose.

PERSONS WHO ARE FROZEN.

Persons unconscious from exposure to cold require a special manner of treatment. The effect of excessive cold upon the body as a whole, and especially so in intoxicated persons who have lain down in the open air to sleep, is at first to produce unconsciousness, which, if warmth is not applied, will sooner or later pass into actual death. When excessive cold prevails the inclination to sit down or to lie down should be resisted, for this is the first indication of freezing. First a sleepy feeling creeps over one, and then loss of consciousness supervenes.

In order to restore a person from this unconscious condition warmth may not be rapidly applied to the whole body, but it should be thawed out by slow degrees. Furthermore, the limbs must be very carefully handled, to avoid fracturing any one of them, for cold renders them very brittle. The patient should be brought into an unheated room, undressed, and covered up to the nostrils and mouth with snow or powdered ice, with which he should be constantly and gently rubbed. The snow should be removed as fast as it melts, until the skin begins to grow warm and the limbs relax.

When its vitality has returned to the skin the snow should be removed and the whole body rubbed with cold cloths. Only now may the temperature of the room be gradually raised and the patient placed in a tepid bath, and afterward in a warm one. From

this point the treatment usual in the case of lethargic persons is to be instituted. The rescued individual must be restricted to a light diet for a day or two after emerging from the lethargy.

POISONS.

The treatment in cases of poisoning requires the stomach to be emptied as quickly as possible of the poisonous substance by means of vomiting, purging, or the stomach-pump. Tickling the membrane of the throat with the finger or with the tip of a feather is in many instances sufficient to induce vomiting. Usually after the giving of an emetic this means is used to hasten its action. Common salt serves a useful emetic action when dissolved in the smallest quantity of water which will absorb it, and given every minute until vomiting occurs.

Another valuable emetic, particularly for children, is pulverized ipecacuanha, which can be had of any druggist. Warm water is very commonly used to produce vomiting, and so too is mustard mixed in warm water. After vomiting is begun there is usually little trouble in keeping it up by simply giving a plenty of tepid water.

HYDROPHOBIA.

Mad dogs are apt to be very quiet, sluggish, and sullen, and to slink away by themselves; others, however, become restless and irritable, and bite and run away. Most such dogs lose their appetite, but they swallow very abnormal substances, such as earth, straw, and shreds of cloth. Mad dogs all bark in a peculiar manner, and this is a characteristic feature of the disease. Their proclivity for biting exhibits itself rather against animals than against men, and sometimes they confine themselves to snapping at inanimate objects; yet they do not always spare their masters. They bite in a noiseless, insidious manner, without previous barking or snarling. Death follows eight or nine days later.

The recognition of hydrophobia, it will accordingly be seen, is not without difficulty, and for this reason it is to be urgently recommended to every owner of a dog, that, so soon as he perceives in the animal any departure from his usual condition and behavior, immediately the object of suspicion should be secluded from mankind.

A dog who has bitten a human being is very apt to be slain at once by the bystanders. This should not be permitted, but the suspected animal should be placed in confinement and watched under proper safeguards for the appearance of the disease. Should no indubitable symptoms indicate the disease in the dog, it can be readily seen what unnecessary mental distress will have been saved both to the person bitten and to his friends.

The ordinary treatment for a dog bite is to cauterize the wound, destroying the poison by burning away the part infected. But those who are bitten by a dog that has rabies should resort to the Pasteur treatment at once, which has proved efficacious in nearly every instance.

OVERCOME BY GASES.

Persons suffocated by carbonic acid, carbonic oxide, illuminating gas or sewer gas must be removed as quickly as possible to a room where the air is pure and where the windows and doors are kept open to secure a constant renewal of the atmosphere.

All clothing must be removed as rapidly as possible, and the patient, completely denuded, placed in a half-recumbent position, and the measures already detailed in cases of drowning employed to restore him to life.

If the respiratory movements have already ceased, long-continued artificial respiration can alone be expected to give success.

SCALDS AND BURNS.

The following facts cannot be too firmly impressed on the mind of the reader; that in either of these accidents the *first, best, and often tho only remedies required* are sheets of wadding, fine wool, or carded cotton, and in default of these, violet powder, flour, magnesia, or chalk. The object for which these several articles are employed is the same in each instance; namely, to exclude the air from the injured part; for if the air can be effectually shut out from the raw surface, and care is taken not to expose the tender part till the new cuticle is formed, the cure may be safely left to nature.

The moment a person is called to a case of scald or burn, he should cover the part with a sheet, or portion of a sheet, of wadding, taking care not to break any blister that may have formed, or stay to remove any burnt clothes that may adhere to the surface, but as quickly as possible envelope every part of the injury from all access of the air, laying one or two more pieces of wadding on the first, so as effectually to guard the burn or scald from the irritation of the atmosphere; and if the article used is wool or cotton, the same precaution of adding more material where the surface is thinly covered, must be adopted; a light bandage finally securing all in their places.

If the skin is much injured in burns, spread some linen pretty thickly with chalk ointment and lay over the part, and give the patient some brandy and water if much exhausted; then send for a medical man. If not much injured, and very painful, use the same ointment, or apply carded cotton dipped in lime water and linseed oil. If you please, you may lay cloths dipped in ether over the parts, or cold lotions. Treat scalds in same manner, or cover with scraped raw potato; but the chalk ointment is the best, In the absence of all these, cover the injured part with molasses and dust over it plenty of flour.

DIRT IN THE EYE.

Place your forefinger upon the cheek bone, having the patient before you; then slightly bend the finger; this will draw down the lower lid of the eye, and you will probably be able to remove the dirt; but if this will not enable you to get at it, repeat this operation while you have a knitting needle or bodkin placed over the eyelid; this will turn it inside out, and enable you to remove the sand, or eyelash, etc., with the corner of a fine silk handkerchief. As soon as the substance is removed, bathe the eye with cold water and exclude the light for a day. If the inflammation is severe, let the patient use a refrigerant lotion.

LIME IN THE EYE.

Syringe it well with warm vinegar and water in the proportion of one ounce of vinegar to eight ounces of water; exclude light.

IRON OR STEEL SPICULÆ IN THE EYE.

These occur while turning iron or steel in a lathe, and are best remedied by doubling back the upper or lower eyelid, according to the situation of the substance, and, with the flat edge of a silver probe, taking up the metallic particle, using a lotion made by dissolving six grains of sugar of lead and the same of white vitriol in six ounces of water, and bathing the eye three times a day until the inflammation subsides. Another plan is —Drop a solution of sulphate of copper

(from one to three grains of the salt to one ounce of water) into the eye, or keep the eye open in a wineglassful of solution. Bathe with cold lotion, and exclude light to keep down inflammation.

DISLOCATED THUMB.

This is frequently produced by a fall. Make a clove hitch, by passing two loops of cord over the thumb, placing a piece of rag under the cord to prevent it cutting the thumb; then pull in the same line as the thumb. Afterwards apply a cold lotion.

CUTS AND WOUNDS.

In all fresh wounds, the first consideration is to remove foreign bodies, such as pieces of glass, splinters of wood, pieces of stone, earth or any other substance that may have been introduced by the violence of the act which caused the wound.

Where there is much loss of blood, an attempt should be made to stop it with dry lint, and compression above the part wounded, if the blood be of a florid color; and below, if of a dark color. In proportion to the importance of the part wounded will be the degree of the discharge of blood, and the subsequent tendency to inflammation and its consequences.

Clean cut wounds, whether deep or superficial and likely to heal by the first intention, should always be washed or cleaned, and at once evenly and smoothly closed by bringing both edges close together, and securing them in that position by adhesive plaster. Cut thin strips of sticking-plaster, and bring the parts together; or, if large and deep, cut two broad pieces, so as to look like the teeth of a comb, and place one on each side of the wound, which must be cleaned previously. The pieces must be arranged so that they shall interlace one another; then, by laying hold of the pieces on the right side with one hand, and those on the other side with the other hand, and pulling them from one another, the edges of the wound are brought together without any difficulty.

COMPRESSION OF THE BRAIN.

From any cause, as apoplexy, or a piece of fractured bone pressing on it, there is loss of sensation. If you tickle the feet of the injured person he does not feel it. You cannot arouse him so as to get an answer. The pulse is slow and labored; the breathing deep, labored and *snorting;* the pupil enlarged. Raise the head, loosen strings or tight things, and send for a surgeon. If one cannot be got at once, apply mustard poultices to the feet and thighs, leeches to the temples, and hot water to the feet.

CHOKING.

When a person has a fish bone in the throat, insert the forefinger, press upon the root of the tongue, so as to induce vomiting; if this does not do, let him swallow a *large piece* of potato or soft bread; and if these fail, give a mustard emetic. A piece of food lodged in the throat may sometimes be pushed down with the finger, or removed with a hair-pin quickly straightened and hooked at the end, or by two or three vigorous blows on the back between the shoulders.

SPRAINED ANKLE.

Wash the ankle frequently with cold salt water, which is far better than warm vinegar or decoctions of herbs. Keep your foot as cold as possible to prevent inflammation, and sit with it elevated on a cushion. Live on very low diet, and take every day some cooling medicine. By obeying these directions only, a sprained ankle has been cured in a few days.

A SIMPLE CURE FOR SPRAINS.

A lady who can testify to the efficacy of the following cure for a sprain or bruise gives it to the public: Make a plaster by stirring salt enough into hot molasses to make it of a consistency to remain in place when confined by a muslin bandage. Suit the size of your plaster to the spot to be covered, and pack it securely around the injured member.

HOW TO RAISE THE BODY OF A DROWNED PERSON.

In a recent failure to recover the body of a drowned person in New Jersey, a French-Canadian undertook the job, and proceeded as follows: Having supplied himself with some glass gallon jars and a quantity of unslacked lime, he went in a boat to the place where the man was seen to go down. One of the jars was filled half full of lime, and then filled up with water and tightly corked. It was then dropped into the water and soon after exploded at the bottom of the river with a loud report. After the third trial, each time at a different place, the body rose to the surface and was secured.

STINGS OF INSECTS.

A free application of ammonia to the part bitten will give instant relief from the stings of bees, wasps, hornets, scorpions, etc. The part may afterward be covered with sweet oil.

BITES OF SNAKES.

These are dangerous and require powerful remedies. The bites of the various kinds of snakes do not have the same effects, but people suffer from them in different ways. It is of the greatest importance to prevent the poison mixing with the blood and to remove the whole of it instantly from the body. Take a piece of tape or anything that is near and tie tightly around the part bitten; if it be the leg or arm, immediately above the bite and between it and the heart. The wound should be sucked several times by any person near. There is no danger to the person performing this kindness, providing his tongue or any part of the mouth has no broken skin. Having sucked the poison, immediately spit it out.

Cutting Out the Poison.

A better plan is to cut out the central part bitten with a sharp instrument. This may not be a very pleasant operation for an amateur, but, as we have to act promptly in such an emergency, courage will come. After the operation bathe the wound for some time to make it bleed freely. Having done this rub the wound with a stick of lunar-caustic or, still better, a solution composed of sixty grains of lunar-caustic dissolved in an ounce of water. This solution should be dropped into the wound.

Of course the band tied round the wound in the first place must be kept on during the time these means are being adopted. The wound afterwards must be covered with lint dipped in cold water. There is generally great depression of strength in these cases; it is necessary, therefore, to give some stimulant, a glass of hot brandy and water, or twenty drops of sal-volatile. When the patient has somewhat recovered give him a little mustard in hot water to make him vomit; if, on the other hand, the vomiting is continuous, a large mustard poultice should be applied to the stomach and one pill given composed of a grain of solid opium. NOTE.—Only one of these pills must be given without medical advice. All these remedies can be acted upon until a surgeon arrives.

ETIQUETTE . . . . OF . . . . POLITE SOCIETY

EMERSON was one of the most acute observers of manners that culture has ever produced, and he wrote: "The longer I live the more I am impressed with the importance of manners. When we reflect upon their persuasive and cheering force, how they recommend, prepare and draw people together; when we think what keys they are, and to what secrets; what high and inspiring character they convey, and to what divination is required of us for the reading of this fine telegraphy, we see what range the subject has."

Manners with some, are the gracious legacy of inheritance, education and environment; with others they are the growth of the careful cultivation of years, and carry with them the calm self-poise of the man who has conqured circumstances and established his own position. In such as these there inheres a certain power that impresses itself upon all who come in contact with its influence.

The self-possession and certainty stamped upon the face of a man who inherited, or won for himself, the sure and perfect armor of good-breeding, is but the outer stamp of the man himself.

Good manners are profitable as well as pleasant. They carry with them a measureless weight of influence. A gentleman once brought into his library a costly subscription book. "My dear," said his wife, "you already have a copy of that work." "I knew I did," he replied, "but the manners of the lad who sold it were so elegant that it was a pleasure to purchase it."

Charm of Good Manners.

The charm of good manners is not a qualification belonging to any particular station in life, for, to the poor and unlettered oftimes may be traced deeds and actions that mark them as nature's noblemen. Education, wealth and social station do not always confer them, but the outer grace may be acquired by all.

In this way it has come to be known that a refinement of laws in any country indicates that a gradual refinement of manners has led up towards, and fully crystallized into a refinement of the hearts and the laws of the people.

It has long been a proverb that "manners make the man." There is a truth in the saying which is universally recognized and admitted. According to the manners, we give to others the character of the true lady or the true gentleman.

INTRODUCTIONS AND SALUTATIONS

INDISCRIMINATE introductions are always in bad taste, yet, since the sweetest of our friendships are wont to reach us through the medium of a formal presentation, it is well that we understand how, when and where these introductions should properly take place.

As a rule, introductions, to be agreeable, should be desired before being given; and since we are, or should be, in a measure, the endorsers of those whom we present to our friends, a due degree of care should be exercised in so doing, lest inadvertently we force upon another what may prove an undesirable acquaintance.

Introduce Yourself.

There are times when it is eminently proper to introduce one's self, such as when you find upon entering a drawing room that the hostess has forgotten your name; or if it should have been wrongly announced; or if you are an entire stranger to the hostess, it is not only proper, but imperative, to introduce yourself at once. Then, too, it occasionally happens that a gentleman, wishing to render some assistance to a lady who is traveling alone, prefers to introduce himself beforehand. This, of course, leaves the lady perfectly free to recognize him or not at any future time. Occasions such as these are constantly arising, and tact and judgment must be used to decide the question for one's self.

Watering-place introductions are frequently given for the convenience and pleasure of the time being. They are usually made by the eldest lady of either party and further recognition in the future is optional.

Correct Form of Introduction.

Do not introduce gentlemen to ladies without first being sure that the acquaintance will be agreeable to the lady, since it is much more difficult for a lady to shake off an undesirable acquaintance than it is for a gentleman. In the case of foreigners it is always well to be careful before introducing them to young ladies at their own request, since it often happens that foreign titles found upon this side the water are extremely dubious. Hence one is clearly justified in referring them to her parents or guardians for the required favor.

In introducing ladies, present the younger to the elder, unless in case of some marked exception, such as a lady of distinction.

The simplest form in presenting one person to another is always the best. A wife presents her husband as "Mr. North,"

"Colonel North," or "Doctor North," always giving him his rightful titles. The wife of the President should introduce him as "The President," while we should address him as "Mr. President."

In introducing a gentleman to a lady one should say, "Mrs. A., allow (or permit) me to introduce (or present) Mr. B.; Mr. B., Mrs. A.," being sure that the names are distinctly pronounced. If this should not be the case, let the parties themselves ask it at once, a simple "I beg pardon, I did not understand the name," saving much future annoyance.

SALUTATIONS.

In our own customs of salutation we bare the head in token of respect, never thinking that in the olden time it was an act of adoration practiced before gods and rulers. When we rise and stand as our friends enter or leave our reception room, it is an act of respect, it was once an act of homage. The throwing of a kiss is an imitation of an act of worship by devout Romans before their gods.

The removal of a gentleman's glove in shaking hands with a lady is the relic of a habit based on necessity. and dating back to a day when the knight of old removed his iron gauntlet lest he crush the maiden's hand within its grasp. The removal of the glove was practiced between men also at a later date, when too often beneath the heavily embroidered gauntlet lurked the assassin's dagger, so that to unglove before a hand-clasp grew to be considered an act of good faith.

The bow, the hand-clasp and the kiss are the principal methods of salutation employed by the most highly civilized nations of this era of the world.

Art of Conversation

ALL other arts pale before the art of conversation as a source of popularity, and no other accomplishment tends so much toward social success. The contact of many minds is a constant stimulus to mental activity and its outward expression in animated conversation. It lends new power to brilliancy of talent, and quickens, to a certain extent, even the lowest and dullest of intellects.

A man will always bear in mind that the greatest compliment he can pay a woman is a respectful, deferential attention to her words. There are men whose very manner of listening conveys, in itself, the most delicate flattery.

A woman, in her turn, should always remember that, however interesting her conversation may be, there is always danger that a man may possibly weary of its protracted continuance, and so she should forbear leaving him no loophole for escape. Louise Chandler Moulton enjoins one thing on woman which they would do well to recollect, and that is, "if they want a man to stay with them to make it evidently and entirely easy for him to get away. There

is something lawless and rebellious in even the best of men; they hate doing things because they are obliged; they must be coaxed."

The current change of society is the light coin of "small talk" that breaks with chink and shimmer the heavy bills of large denomination, that else would overwhelm social conversation with their size.

The very essence of the art of conversation is to draw others out and cause them to shine; to be more anxious, apparently, to discover other people's opinions than to advance your own.

"Drawing Out Others."

Who does not remember gratefully and admiringly the sympathetic people who seem to draw out the very best there is in us—in whose company we appear almost brilliant, and actually surprise ourselves by the fluency and point of our remarks? Such people are a boon to society. No one sits dull and silent in their presence, or says unpleasant, sarcastic things before them, and, while never seeming to advance any views of their own, and certainly never forcing them upon our attention, we involuntarily learn of them and love them, scarcely knowing why.

Sidney Smith once said: "Man could direct his ways by plain reason and support his life on tasteless food; but God has given us wit and flavor, and laughter and perfumes, to enliven the days of man's pilgrimage and to charm his pained footsteps over the burning marl." And Sidney Smith was so much the life and soul of every social gathering, that while the English language is spoken his witty remarks will be quoted with delight.

Wit, however, is too often but another name for sarcasm and ridicule, that like a barbed arrow rankles long in the soul of its victim. True humor, it should be remembered, is neither scathing nor insolent; it is simply that bright repartee that someone aptly calls the "spice of conversation." Hence it would be well to smother the temptation to be witty at the expense of another, and crush back the brilliant but cutting retort meant only to wound, not to amuse.

Evil Speaking.

Beware of evil speaking. In the eyes of all right-minded persons much that you have said recoils upon your own head, for no one has quite the same opinion of an individual after having listened to a series of scandalous stories from his lips. Hence, for your own sake, as well as for that of others, eschew the vice of evil speaking as a very pestilence.

Let young ladies have a care how they speak lightly or contemptuously of one another at any time, but more especially when conversing with men. Nothing, as a rule, is more prejudicial to a woman, in the estimation of a man, than this all-too-prevalent habit. No matter what the faults of your sister-woman may be, condone them gently, or if this be impossible, let a silence that is golden fall about the subject.

Unhesitatingly acknowledge a woman's beauty or talent, and instead of detracting from your own merits, it will enhance them in the eyes of all. A young man was once heard by the writer counselling his sister from the depths of his own experience as a social favorite. "Never," said he, "say one word against a girl to any young man. It only puts you down in their estimation. Say something pretty and complimentary about them if you can; if not, keep still." And his advice was words fitly spoken, that are, indeed, "like apples of gold in pictures of silver."

Stories should never be introduced into general conversation unless they meet several requirements. In the first place, they should be short and well told. Secondly, they should be new to the company where they are told. Nothing is more tiresome than listening to a twice-told tale, though the height of good breeding is to smile over its tediousness.

To be endurable, compliments should be made use of in a very cautious and artful manner. If permitted to degenerate into gross flattery they are far from complimentary to the understanding of the individual addressed. The day, happily, is long since past when conversation between men and women was confined to unmixed flattery on the one side and blushing acceptance on the other. That "the best flattery is that which comes at second hand," no one can deny, yet, judicious praise is not only acceptable but useful many times in giving the needed incentive, without which the flagging footsteps might have faltered on their way.

Let your voice be low and pleasantly modulated and your enunciation clear, distinct and musical. All these things are marks of good breeding, and, if not yours by birthright, may be acquired by patience and perseverance. Avoid high tones and nasal tones. Do not talk rapidly, or in a hesitating, stumbling fashion. A partial course in elocution and voice training will work wonders in this direction, and any one determined to succeed will never regret the time or money so spent.

Repose of manner should be assiduously cultivated. Do not fidget or loll about in your chair, or twist your fingers constantly, or play with something while you talk, or restlessly beat a tattoo with fingers or feet. All such faults render your companionship a burden to those about you.

Visiting Cards

THE card should be perfectly plain, fine in texture, thin, white, unglazed and engraved in simple script without flourishes. Gilt edges, rounded or clipped corners, tinted surfaces or any oddity of lettering, such as German or Old English text, are to be avoided. A photograph or any ornamentation whatever upon a card savors of ill-breeding or rusticity. Have the script engraved always, never printed. The engraved autograph is no longer considered in good taste, neither are written cards as elegant as those that are engraved.

The regulation size, both in this country and England, for a lady's visiting card is three and one-half inches in length and two and one-half inches in width. This oblong form is most generally used, but there is an almost square shape, two and a half inches by three, also in favor, and especially used by unmarried ladies where the shortness of their name would be too much emphasized in the longer card. For instance: "Miss Ray" would be quite justified in choosing the square style, while "Miss Ethelinda Crane" or "Mrs. Algernon Spencer" would find the length of their names displayed to better advantage on the oblong card.

Cards for gentlemen are much smaller than those for ladies. This holds good in

both England and America, where the required size is three inches one way by one inch and a half the other, or thereabout.

The largest card in use is the one sometimes adopted by the newly-married and engraved with their joint names. Thus:

MR. AND MRS. GRANT TROWBRIDGE

may make use of a card four inches long by three and one-half in width, but a lady and her daughter, where their names appear together, should use the first-mentioned oblong size for ladies.

Engraving the Name.

Married ladies make a point of using their husband's name or initials upon their cards instead of their own, as:

MRS. GEORGE B. CLEVELAND.

Or:

MRS. G. B. CLEVELAND.

Instead of:

MRS. GRACE E. CLEVELAND.

It occasionally, however, happens that some lady, unwilling to so lose the identity of her own name, prefers this latter form. Or, if her family name be an old and honored one, she frequently retains it, thus:

MRS. GRACE ETHRIDGE CLEVELAND.

The black border upon a widow's cards should never be over a quarter of an inch in depth: more than this savors of ostentation rather than affliction.

Young ladies, especially if it is their first season in society, will find it the best form to have their names engraved upon the visiting card of their mother.

Young ladies should always prefix "Miss" to their names, the prefix "Miss" carrying with it a certain quiet reserve and dignity.

Custom with reference to the cards that a man must carry, is considerably less arbitrary than towards women in the same respect. He may use his initials or his full name, as it pleases him. He may inscribe himself "Mr. John Smith," or simply "John Smith," and be quite correct in so doing, though just now there is a little inclination in favor of the more formal "Mr.," an English custom we do well in copying.

Military, not militia, naval and judicial titles, may always be used. Physicians and clergymen have the same privilege; honorary titles, however, should be avoided.

Some eminent men go to extreme simplicity, as, for instance, "Mr. Webster" being all that graced the cards of that celebrity.

It is hardly necessary to say that a business card should never be used as a visiting card. A gentleman carries his cards either in his pocket or in a small leather case sold for that purpose.

Cards for Receptions.

Cards may be used for receptions, lawn-tennis parties, afternoon teas, etc., in place of more formal invitations, the nature of the entertainment being stated in the left-hand corner of the card.

There are a certain number of French phrases that custom has declared shall take the place of that "pure English undefiled" whereof Spenser wrote. In a few cases these chance to be shorter, more euphonious and more directly to the point than the corresponding English phrase. For instance, the word "chaperon," so important in its signification at the present, has no adequate English translation. Below is given an alphabetical list of those phrases in most frequent use, together with the abbreviations.

FRENCH PHRASES.	ABBREVIATIONS.
Bal masque	A masquerade ball.
Chaperon	An older woman attending a girl in society.
Matinee.	A morning or daylight entertainment.
Matinee musicale . . .	A daylight musical entertainment.

In leaving cards follow the fashion of those who have paid you the same courtesy. If a call has been made upon you, return it by a call, as to return a personal visit by the sending of a bit of pasteboard would partake of the nature of a slight. If cards only have been sent you by a servant, return cards in the same manner by messenger or servant; if they were sent by mail, return by mail. If the cards of any of the gentlemen of a house are left, always leave the cards of any gentleman of your family in return.

Making First Calls.

Of course first calls should be made and returned in person, the card-leaving formalities coming later on. This rule is departed from only by a few ladies whom age, health, social or literary duties will excuse from making personal calls. These frequently permit themselves to send out cards in place of a first call, either accompanying them with, or immediately following them by an invitation to some entertainment. This attention should receive the same notice as a first call; cards should be sent in return, together with an answer to the invitation, if it is of a nature to require it, and a personal call must be made thereafter, unless it was simply an afternoon tea, and an invitation sent in return speedily as possible.

Cards sent by messenger are enclosed in a single unsealed envelope; sent by mail this envelope is enclosed with another and larger one which is sealed. Cards handed in at the door are received by the servant on a salver to prevent being soiled by handling.

First Calls of the season necessitate the leaving of cards. Let them to be left quietly in the hall. This custom assists the lady of the house in revising her visiting list.

Letters of Introduction necessitate that those who have received courtesies in response to such, should, upon their departure, send P. P. C. cards to those that have thus remembered them.

A Change of Residence renders it desirable to send cards by mail to one's friends with the new address engraved thereon. However, should there be unpaid calls, the cards to these should be left in person.

A Reception Day.

The Return from an Absence, including any length of time, should be announced by sending out cards having the address and reception day engraved upon them. Where P. P. C. cards have been issued previous to departure these should always follow the return.

Preceding a Debut. Previous to the date decided upon for the presentation of a *debutante* to the social world, the young girl's mother calls upon those of her friends whom she desires to be present upon the occasion and leaves them her own and her husband's cards, and, if she have grown sons, their cards also.

Reception Invitations to a full dress reception are preceded by a call by card upon all the acquaintances to whom the hostess may be indebted.

After Cards is the name applied to those that are sent to friends after a marriage and are engraved thus:

MR. AND MRS. CHARLES E. SMITH.

Later on, however, when the bride returns visits, she usually leaves her own card with her married name engraved upon it, thus:

MRS. CHARLES E. SMITH.

at the same time leaving her husband's separate card with her own.

Before Marriage, the bride expectant in paying her farewell calls, leaves her own separate card, together with that of her

mother or chaperon, with all acquaintances she may wish to retain in her new life.

Among the cards as yet not referred to in this department are the following:

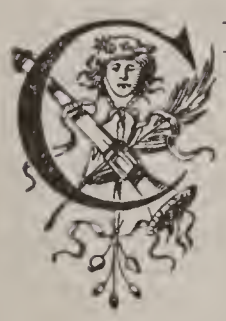
Cards of Congratulation, such as those sent the parents of a newly-betrothed couple upon the announcement of the betrothal; those sent the happy parents of a lately arrived son or daughter, etc. Cards of this description should be left in person, though it is not expected that you should enter and make a formal visit. The leaving in person, however, is a compliment.

Cards of Betrothal are distributed by the parents of the newly-engaged pair, leaving their cards with their own on all friends of the family. Individuals receiving these cards should call as soon as possible.

Cards of Courtesy are sent on many occasions. For instance, to a house where the children or youth of the family have been invited without including the elders. This is done in acknowledgment of the courtesy extended to their children. Again, a gift however simple, even flowers, should always be accompanied by a card of courtesy, never by a card simply. Cards should also accompany, or be attached to, flowers sent to a funeral, that the family may know friends remembered them in their sorrow.

Cards of Inquiry are frequently sent, or better still, left in person, at the homes of friends prostrated by severe illness, or by recent bereavement. These usually have the words, "To inquire," or "With kind inquires," pencilled above the name.

CALLS AND VISITS



CEREMONIOUS visits should always be short, fifteen to twenty minutes being the outside limit, and a shorter time often sufficing. Even should the conversation become very animated, do not prolong your stay beyond this period. It is far better that your friends should regret your withdrawal than long for your absence. A lull in the conversation, a rising from her seat, or some pretext on the part of the hostess, or the arrival of a guest, all give an opportunity for leave-taking which should be made use of at once.

A hostess does not necessarily advance to receive her guests, simply rising and moving forward a step in order to shake hands (if she should so wish), remaining standing till they are seated, and, if possible, keeping the latest comer near her side. Gentlemen should always permit the lady to make the first advance in the matter of handshaking. It is her prerogative.

As the guests depart, the hostess does not accompany each one to the door, but rising, remains standing until the guests have quite left the room, when it is to be supposed they will be met by a servant. In country towns the hostess usually accompanies the guest to the door, if there are others present, excusing herself to them and remaining out of the room but a moment.

Cultivate the art of leaving; nothing will contribute more to your social success. It

is said of so brilliant a woman as Madame de Staël that she failed lamentably in this particular, and, on the occasion of her visit to Weimar, made with the avowed intention of intellectually captivating the literary lions of the age, Goëthe and Schiller, she made one fatal mistake, she stayed too long! Goëthe wrote to Schiller: "Madame de Staël is a bright, entertaining person, but she ought to know when it is time to go!" It is also evident from her own statement that she did not know *how* to go. She lingered after she had started, and even if this were an unpardonable sin on the part of so marvelous a woman, it is surely a capital crime on the part of ordinary mortals.



A MORNING CALL.

Never say, "I must go," but, when you have finished your visit and rise to depart, go! Never permit yourself to be drawn into touching upon any subject at this critical moment that will necessitate lengthy discourse for yourself and hostess, or force upon you the awkward alternative of reseating yourself to finish the conversation. There is always a certain awkwardness in thus repeating the ceremony of leave-taking which may be avoided by a quick and graceful departure that leaves both host and guest with feelings of the utmost amiability.

There, is possibly, more difference of opinion on the subject of *who* shall make the first visit or call and *when* it shall be made, than almost any other point of eti-

quette. At the same time more importance is attached to it than to almost any other social question, and it touches more uniformly every phase of city or country life than any other canon of courtesy.

Common sense and kindliness of heart are always to be relied upon in matters of this nature, and the initiative may safely be taken by those who have social position, age, or length of residence on their side. Of course in large cities the immense demands of social life give a certain immunity from anything like promiscuous calling to those whose circle of acquaintance has already grown beyond the limits of their time. In towns and villages, however, no such immunity exists, and a call may be easily made, or a card left, while, on the other hand, should the new acquaintance prove "pushing," or in any way obnoxious, one simply ceases to leave one's cards and the evil is done away with.



ETIQUETTE OF THE DRAWING-ROOM.

Any visit made between the hours of twelve and six is to be looked upon as a morning visit, though there is a little difference in various cities with regard to the exact time. Where one expects to touch upon reception hours, from three to five is usually a safe limit. In country towns or the small cities, from two to five are the usual hours for paying visits. Evening visits should be made between the hours of eight and nine, and ordinarily should never extend in length beyond the hour of ten.

Gentlemen are permitted to call upon lady friends, Sundays after church and Sunday evenings, business cares being their excuse for not availing themselves of the other days of the week. Of course, if there exists any known objection in the family to Sunday visiting all their friends are bound to respect it.

A Card May be Left.

If a lady have a known reception day, callers are bound, in common politeness, to make their visits, as far as possible, upon that day. If this is not done, either a card only should be left, or, if a personal visit is intended, particular instructions should be given to the servant to the effect that if "Mrs. Brown is otherwise engaged, she is not to trouble herself to come down." For which thoughtfulness, "Mrs. Brown," if she be a busy woman, and troubled with many socical cares, will cordially thank you.

Unfortunately, it often happens that many of our friends have the same reception day, and one's own "day" may conflict with that of one's nearest friend, so that, where the circle of acquaintance is large, much good nature, a few apologies and a great many cards are needed to safely balance the social accounts.

The simple and necessary formulæ of, "Not at home," or "Engaged," are more frequently questioned than any other social custom. Nevertheless their use is often a necessity, while, on the contrary, their abuse

is to be regretted. No suspicion of an untruth need apply to either, for the phrase, "Not at home," is used with the accepted signification of, "Not at home, for the time being, to any visitors." If, however, conscience rebels against this so transparent fraud, there is always the alternative of "Engaged," which carries not the least suspicion of deception with it, but is somewhat less gracious to the ear.

In suburban towns and small cities, where reception days are not common, the lady of the house must be very careful how and when she denies herself to visitors.

A gentleman does not call upon a lady without some intimation of her wishes in the matter, unless he is the bearer of a letter of introduction, or is taken to her home by some friend sufficiently well acquainted to warrant the liberty. He may, however, seek an introduction through some mutual acquaintance.

Ladies may express regret at being out when a gentleman called; he also should regret the absence. If it should happen that a gentleman should call several times in succession and be so unfortunate as to miss the lady each time, it would be quite proper for her to write him a note, regretting her absence and appointing an evening when she would be at home for his next call. This would remove any feeling of annoyance on his part that perhaps her absence had been premeditated.

Weddings and Wedding Anniversaries

AN engagement is now frequently announced in rather a formal manner. This, however, is not usually done until a short time previous to the marriage itself. Sometimes it comes out in the society papers immediately after it has been made known to the kinfolk and intimate friends. Felicitations follow as a matter of course.

The lady does not make any ceremonies calls after this announcement has been made, it being supposed that before this occurs she shall have left cards upon all her friends. If no formal announcement is made the bride-to-be must, before invitations are issued, leave cards with her friends and acquaintances. In the city she need not enter to make a personal call, in the country she will probably find it necessary so to do.

Time was when during the two weeks, or longer, elapsing between the issuing of the invitations and the occurrence of the wedding, the bride-expectant was not to be seen in public, nor by chance callers at the house, a custom which still prevails to some extent, but is superseded in the most fashionable circles by a series of especial entertainments given during this interval. These, however, are a great tax upon time needed for other purposes.

By those so desiring, the words, "No presents received," may be engraved in the left hand corner of the card. This is often a relief to many of the guests, and, at the

same time does not prevent the very intimate friends, as well as members of the family, from sending quietly such gifts as they may choose, which, of course, are not exhibited.

The bride acknowledges the reception of each gift by a graceful little note of thanks. Some of them doubtless will come from persons unknown to her, friends of the groom, and to these she must be especially prompt in returning her acknowledgments.

The Ushers.

The duties of the ushers in a church wedding are very important. At large weddings as many as half a dozen, or more, ushers are sometimes needed to manage the great number of guests. They usually appoint one of their number as head usher, and to him falls the duty of deciding on the space to be reserved for near clatives, which is to be divided from the remainder of the church by white ribbons. He makes sure that the organist is in place, indicates the approach of the bridal party that the Wedding March may greet them, and instructs the other ushers as to their respective duties.

In escorting guests to their seats an usher gives his right arm to a lady. A gentleman who may be in her company should follow after.

The "best man" is usually an intimate friend or relative of the groom. He drives to the church with him, stands by his side at the altar-rails while he awaits the approach of the bride, and, stepping back, it is he that holds the groom's hat during the ceremony and hands it to him at its close.

The ushers frequently form, two and two, and precede the bridal party up the aisle.

The number of these is optional, from one to twelve being allowable. Four, six or eight are usually chosen. Unmarried sisters of the bride and groom are frequently selected. Custom emphatically declares that they must be younger than the bride. For an elder sister thus to officiate would be extremely inappropriate.

Home Weddings.

Home weddings are attended with much less trouble, fatigue and expense than fashionable church weddings. The clergyman enters the room and stands facing the people; the bridal couple follow and stand facing him. Hassocks are provided for kneeling, if desired. The father, or some near male relative, stands ready, in sight of the clergyman, to give away the bride. He should simply bow his affirmation when the question is asked.

There are many additions that may be made to this simple ceremony, such as a troop of pretty children holding white ribbons each side to mark the path the bridal pair must walk to reach the minister, while the sweet strains of a hidden band of musicians may accompany their footsteps.

The House Decorations.

Floral decorations, within limits, are beautiful and appropriate, but where they are so lavishly displayed as to remind more of the florist's bill than the beauty of the blossoms, their effect is lost in a certain vulgarity that attends all too-visible evidences of outlay.

One pretty idea is to carry out the fancy of having one kind of flower, massed according to the chosen design, serve for the decorations, at flower weddings; for example, rose weddings, lily weddings, daffodil weddings, etc. The design itself is according to the taste of the florist or the family, and is a subject changing so easily with the season or the fashion as to merit no mention here.

It is necessary for the bride to include her

new address with her wedding invitations, unless, as is still more "chic," cards for several reception days are issued after her return. These dates being fixed, it is then that first calls may be made upon her at her new residence with the happy certainty of finding her at home.

At these quiet, informal receptions, she receives simply as a member of society, wearing usually a rich, dark silk without any reminders of her recent bridehood.

WEDDING ANNIVERSARIES.

The wedding anniversaries are numerous, but only a few of these are habitually observed. Paper, wooden, tin, crystal, silver and golden are the favorite ones, the others being so rare as to hardly merit being included in the list.

The following complete list of the anniversaries, with the respective dates of their occurrence, may be useful for reference:

First Anniversary	Paper Wedding.
Second Anniversary	Cotton Wedding.
Third Anniversary	Leather Wedding.
Fifth Anniversary	Wooden Wedding.
Seventh Anniversary	Woolen Wedding.
Tenth Anniversary	Tin Wedding.
Twelfth Anniversary	Silk and Linen Wedding.
Fifteenth Anniversary	Crystal Wedding.
Twentieth Anniversary	China (sometimes Floral) Wedding.
Twenty-fifth Anniversary	Silver Wedding.
Thirtieth Anniversary	Pearl Wedding.
Thirty-fifth Anniversary	Coral Wedding.
Fortieth Anniversary	Ruby Wedding.
Forty-fifth Anniversary	Bronze Wedding.
Fiftieth Anniversary	Golden Wedding.
Sixty-fifth Anniversary	Crown-Diamond Wedding.
Seventy-fifth Anniversary	Diamond Wedding.

Tin and Paper Weddings and some other of the earlier anniversaries are usually occasions for happy frolics, and merry jests as to the form the gifts will take, though the paper wedding gives place for the presentation of elegant books, and a supply of fashionable stationery.

The Wooden Wedding is a little more expensive in its demands, and the gifts range from elegant *suites* of carved furniture down to dainty bits of hand-carving in the shape of panels and placques; and from rolling-pins and potato-mashers all the way up to oaken mantels, rich with all manner of ingenious fret-work of design.

The Crystal Wedding may also show forth a glittering array of gifts both ornamental and useful.

The Silver Wedding is, perhaps, the most important of all the wedding anniversaries. In the matter of presents it is almost impossible to go amiss, since there is scarcely an article of use or ornament from dining-room to reception-room and from the library desk to my lady's toilet table, that has not been made a thing of beauty and a joy forever by the silversmith's art.

Fiftieth Anniversary.

The Golden Wedding, from the advanced age at which it occurs, has an element of sadness in its celebration. The aged couple who stand so near the brink of separation can have little of bridal joy as they look back to the day when they stood before the altar in the first flush of youth, with life before them, or as they look forward to the shortened span of years that links them to their loved ones here. The gifts that are laid before them should be fitly wrought of gold, since their love has been as gold tried in the furnace of life.

If the family means are insufficient for numerous valuable gifts, let all the friends "club" together and purchase some fitting souvenir for the occasion. Golden-rod forms an appropriate floral decoration.

But, after all, the chief idea and the pleasure of this anniversary is the gathering together of as many as possible of the relatives that

yet remain to greet the pair at this, the golden milestone of their life's journey.

The Diamond Wedding occurs so seldom, and is so much like the others in the manner, if not the matter of its gifts, as to scarcely require mention here.

The entertainment at these anniversary celebrations is very much the same as at weddings or other gatherings. The refreshments may be served at tables, or a "stand up" collation given. In this latter case, there should be one or two tables set for the elders of the party.

At Silver and Golden Weddings presentation speeches are frequently made by some friend, and at golden anniversaries a regular program is oftimes carried out. Anniversary poems are read, "The Hanging of the Crane" recited, congratulatory telegrams from absent friends are announced, and any old acquaintances present that can be persuaded to say a few words of "ye olden times" are pressed into service. Good taste, however, would seem tc prevent any repetition of the marriage service on such an occasion.

DINNER GIVING

THE hostess is expected to put her guests, as much as possible, at their ease. She must encourage the timid, and watch the requirements of all. No accident must ruffle her temper. In short, she must for the time, be that perfect woman who is—

"Mistress of herself though china fall."

She must not seem to watch her servants; she must not scold them. Her brow must remain smooth through all embarrassing hitches, her smile be bright and quick, her attentions close and complimentary to her guests.

On the host devolves the duty of drawing out any of the guests with whose particular specialties he is acquainted, and his manners, too, must at least simulate ease, if he have it not. Let host and hostess refrain from boasting of the price of any article of food upon the table.

All the tact and good breeding at the command of the hostess should be exercised, first in choosing, then in arranging, the guests to be present. Not too many are to be bidden to the ordinary dinner; six, eight and twelve are desirable numbers, and four frequently forms the cosiest party imaginable.

The reason of thus arranging for even numbers arises from the fact that, in a mixed dinner party, it is well to have as many ladies as gentlemen. The conversation will then be prevented from dropping into long, or heated, discussions, both of which are destructive of pleasure. It will also be found pleasant to invite the young, and those of more advanced years, together for an occasion of this sort.

Since at no social entertainment are the guests so dependent upon one another for

mutual entertainment as at a dinner, both by reason of its smallness and the compactness of arrangement, it will be seen that an equal care devolves upon the hostess in seating as in inviting her guests.

The most tedious of one's friends can be tolerated at a party where it is possible to turn to others for relief, but to be chained for two or three hours, with the necessity upon you of talking, or trying to talk, to the same dull or conceited individual that the fates have unkindly awarded as your companion, is a severe social strain upon equanimity of soul.

Hence each hostess should strive to so arrange her guests that like-minded people should be seated together, and people with hobbies should either be handed over to those likewise possessed, or into the hands of some sympathetic listener, thus securing the pleasure of all.

Table Decorations.

Where the resources of the dinner-giver are limited, the simple decoration of a few flowers arranged in a fanciful basket, or a rare old bowl filled with roses, is sufficient, and is far more indicative of taste and breeding than many of the set floral pieces fresh from the florist's hand, and speaking more eloquently of the size of his bill than of taste or appropriateness.

The fancy of the hour, and a pretty one it is, is for massing one variety of flower for decorative purposes. Banks of crimson roses down the centre of the snowy cloth, or great clusters of vivid red flowers, can be very effectively employed. Shells may be filled with flowers and used as a table decoration. A large one in the middle, and a smaller one on each side, has a pleasing effect. At each plate a bouquet of flowers may be laid, those for the gentlemen arranged as button-holes.

In choosing the flowers for decorations, avoid those blossoms having a heavy fragrance, such as the tuberose, jasmines, syringas, as their penetrating odor is productive of faintness in some, and is disagreeable to many, while roses, lilies, lilacs, and many other delicately-scented blossoms, are pleasant to all.

Naturalness is to be aimed at in these decorations, and set floral pieces are in bad taste at a private dinner.

How the Dishes are to be Passed.

The servants, in passing the dishes, begin with the guest upon the right hand of the master on one side of the table, ending with the mistress of the house. Upon the other side they begin with the guest upon her right and end with the host. As one servant passes the meat or fish, another should follow, bearing the appropriate sauce or vegetable that accompanies it.

The servants should wear thin-soled shoes, step lightly, be ungloved, and always have a small-sized damask napkin wrapped around the thumb of the right hand, as dexterity in handling the dishes requires that they should extend the thumb over the edge of the dish.

They should pass all dishes at the left of the guests, that their right hand may be free to take them. Wines only are excepted, these being always poured at the right. Servants should never lean across any guest at table in order to reach or pass an article.

It will be noticed by all interested that the order of the formal, modern dinner *a la Russe*, is very much as follows: Oysters, soup, fish, roast, entrées, Roman punch, game, salad and cheese, dessert, fruits, sweets, coffee. To make this clearer, one bill of fare will be given as an example, always remembering that the number of courses may be lessened in order to suit the

taste or purse of the host. Many courses are not a necessity, but the finest quality and the best of cookery should mark each dish served.

Every dinner should begin with soup, to to be followed by fish, and include some kind of game. To this order there is no repeal, since "soup is to the dinner," says De la Regnier, "what the portico is to the building or the overture is to an opera." From this there is never any deviation.

A standard bill of fare for a well-regulated dinner is as follows:

Oysters on the Half-shell. Mock Turtle Soup.
Salmon with Lobster Sauce. Cucumbers.
Chicken Croquettes.
Tomato Sauce. Roast Lamb with Spinach.
Canvas-back Duck. String Beans served on Toast.
Celery. Lettuce Salad. Cheese Omelet.
Pineapple Bavarian Cream. Charlotte Russe.
Ices. Fruits. Coffee.

Each course may be served on dishes different from the other courses; also fancy dishes, unlike any of the rest, may be used to pass relishes, such as olives, and add greatly to the beauty of the table service. Suitable sets for fish and game, decorated in accordance, are greatly to be admired.

If wine is not desired from principle, merely touching the brim of the glass with the finger-tip is all the refusal a well-trained servant needs.

Order of Precedence.

In the matter of going out to dinner the host takes precedence, giving his right arm to the most honored lady guest. If the dinner is given in honor of any particular guest, she is the one chosen, if not, any bride that may be present, or the oldest lady, or some visitor from abroad. The other guests then fall in line, gentlemen having had their partners pointed out to them, and wherever necessary, introductions are given. The hostess comes last of all, having taken the arm of the gentleman most to be honored.

This is a disputed question, for the solution of which each party gives valid reasons. Most gentlemen prefer to give the right arm, since the seating of the lady is at the right side always; but many, to preserve the feudal significance of the custom that bade the good knight keep his sword arm free for defence, if need be, offer the left. Since, too, dinner gowns have usually a train to be managed as best it may, ladies also prefer the tender of the left arm, as that leaves their own left arm free to manage the trailing, silken folds. The right arm, however, has the balance of favor, though gentlemen are bound to follow the example of their host as he precedes them to the dining-room.

Dinner Dress.

Ladies dress elegantly, and in any fashion of color, that fancy or becomingness may dictate. Corsages, however, while open at the neck in either square, or heart-shaped fashion, are not as low-cut as for a ball-dress, while the sleeves are usually of demi-length. Gloves are always worn, and not removed until seated at the table. They are not resumed afterwards unless dancing follows.

Very young ladies wear less expensive toilets of white or delicately tinted wools, or light-weight silks.

Gentlemen are expected to wear the conventional evening dress. To be gloved or not to be gloved is a vexed question with them. It is well to be provided with a pair of light gloves, and let your own self-possession and the example of others decide for you at the moment. A gentleman faultlessly gloved cannot go far wrong.

Promptness in arriving is a virtue, but remember that you have no claim upon the

time of your host or hostess, until ten or fifteen minutes before the hour appointed, and, if you arrive too soon you should remain a while in the dressing-room.

Departure is from half to three-quarters of an hour after the repast, and no matter what the entertainment, eleven o'clock should find every dinner guest departed.

BREAKFASTS LUNCHEONS AND TEAS

BREAKFAST or a luncheon is somewhat less formal than a dinner and, hence, so much the more delightful.

The breakfast party includes both gentlemen and ladies while, as a rule, the luncheon is an entertainment given to ladies. The invitations to a breakfast may be written, engraved or verbal. If a large number of guests are invited to meet some distinguished stranger, engraved invitations are issued.

Five days or a week's notice is usually considered sufficient, but if distinguished wits and scholars are to be secured, it is well to give a longer period, since their time, always in demand, should be bespoken well in advance. A reply to the invitation is a necessity, because the hostess wishes time, in case of non-acceptance, to secure another guest.

Where the breakfast is less stately in character, an informal note, written by the hostess, in the first person, is a pleasant method, or simply written on the lady's visiting cards under the name in this form: Breakfast, Tuesday, ten o'clock, February fifteenth.

Artificial light is out of place, and sunshine should flood the apartment, while a certain airiness and daintiness should pervade the table appointments, quite the opposite of the elaborate display that characterizes, the dinner party. Flowers should form the decorations of the table. Breakfast parties are a very convenient mode of social entertainment for those whose limited means will not admit of a more extensive display of hospitality.

The Hour for Breakfast.

Ten o'clock is the usual hour, though it may be as late as twelve, thus differing from the luncheon, which is never earlier than one.

Breakfast parties are a favorite reunion with literary people, who generally take the morning hours for leisure, leaving brain work until later in the day. Sidney Smith said he liked breakfasts, "because no man was conceited before one o'clock in the day."

In serving breakfast the bill of fare, unless for special occasions, should never be elaborate, but rather dainty and attractive, as the appetite usually needs tempting at this early hour; fewer courses of a more delicate variety should be served than at other meals. The hostess dispenses the coffee, tea and chocolate from the head of the table; the substantials are set in front of the host, who

may help the plates and hand them to the waiter to serve; the vegetables and other dishes may be handed from the side table.

It is well-bred to serve the breakfast with as little formality as possible, and with as few attendants; one servant, a maid, or man servant is sufficient unless the party is unusually large.

If grape-fruit be used for a first course, or orange skins filled with juice, a wreath of smilax on each plate makes a pretty decoration.

A breakfast should invariably begin with fruit, followed by a course of eggs. This latter is one of the essentials, and offers a greater variety than is perhaps known outside of France. A Spanish omelette, if properly made, is a thing to be treasured among the "pleasures of memory." Stuffed eggs, or hard boiled eggs cut in slices, with a bechamel or white sauce, are appropriate and generally liked. A fish course, an entrée, one meat, a salad and a sweet course should follow next in order, concluding with coffee.



ETIQUETTE OF THE TABLE.

The entreé and the meat may form one course, if a slice of duck with olives, fried chicken or some such dish be selected.

Ices of all kinds are entirely out of place at a breakfast. An omelette soufflé, peaches with cream, or best of all a fruit salad, are within the proprieties. This last never fails to call forth enthusiastic appreciation. It is simply made, and keeps perfectly for two or three days. Half a dozen oranges should be peeled, leaving no particle of the white adhering, and then cut in small pieces. Half a ripe pineapple, broken with a fork into bits and sugared to taste, and four bananas sliced, are mixed with the oranges, and the whole put on ice for three or four hours. This will be found a dish rivalling the ambrosia of high Olympus.

Hot Breads.

With the first course of fruit, finger-bowls are in readiness, but are removed at its close. Hot breads and breakfast cakes are always suitable, and oatmeal, carefully cooked and served with thick cream and powdered sugar, often follows the fruit. The closing course should be hot cakes served with honey or maple syrup.

If there are ladies present, or the hostess presides, the coffee, chocolate, etc., are poured by her, and after the first course she asks the guests when they will have it served.

The following will be found an acceptable bill of fare for an ordinary breakfast party. It can, of course, be varied to suit the convenience and taste of housekeepers:

Melons. Grapes. Oranges.
Fried Perch with Sauce Tartare. Saratoga Potatoes.
Young Chickens with Cream Gravy.
Poached Eggs on Toast. Baked Mushrooms.
Broiled Quails. Tomatoes or Celery.
Bread and Butter. Crackers. Hot Cakes.
Coffee. Tea. Chocolate.

If a butler serves at a breakfast he does not wear full dress as at a dinner.

LUNCHEONS.

A luncheon is usually an entertainment given by a woman to women. From whatever cause, luncheon parties are rapidly gaining popularity among us. Macaulay wrote, "Dinner parties are mere formalities, but you invite a man to breakfast, because you want to see him," and the same may apply to luncheon parties for ladies, these being almost exclusively their affair.

Invitations to small luncheons are usually very informal, and may be written in the style of a familiar note of friendship; or a visiting card may be used, underneath the name of which is simply written: Luncheon at one o'clock, Thursday, January eight.

The Eatables.

The repast may be elaborately made up of salads, oysters, small game, chocolate, ices and a variety of dishes which will destroy the appetite for dinner, or it may simply consist of a cup of tea or chocolate, thin sliced bread and butter, chip beef or cold tongue, but there is the same opportunity to display good taste and a well-appointed table as at a grander entertainment.

Ladies attend formal luncheons in very elegant street or carriage costumes. They wear rich and becoming bonnets, which they do not take off. They appear with gloves, removing them when seated at the table.

The toilet of the hostess may be as elegant as she wishes, anything, in fact, short of an actual evening costume.

High tea is really the evening supper, although sometimes the "high tea" is spread for an earlier hour than the supper, say seven or eight o'clock. The ladies come in visiting costume, and the gentlemen in morning dress in country towns. In cities, sometimes, dress coats and light gowns are considered essential.

One waitress, if quick and deft, can readily wait on a dozen people, especially if all the necessary articles for changing the courses, plates, silver, etc., are arranged on a side table in the room or outside the door.

There are many attractive menus that can be suggested for teas, but the following seems to demand as little home labor for satisfactory results as any other. The word *tea*, by the way, is something of a misnomer, as at these entertainments the beverages are almost invariably coffee or chocolate, or both, tea being left entirely out of the question:

Menu.

Bouillon. Bread. Crackers. Celery.
Pickled Oysters. Chicken Salad. Olives.
Peanut Sandwiches. Salted Almonds.
Chocolate. Ice Cream. Fancy Cakes.
Coffee. Fruit.

Serve the bouillon in cups, and be sure that it is *very* hot. Have a thin slice of lemon floating on the surface of each cup. Pass crackers (the Zephyr or Snowflake brands are best,) with this, and choice blanched celery. If the tables are set before the guests arrive, it is well to have a couple of short stalks of celery laid at each plate and spare that amount of waiting. Have each cup and saucer set in a plate, and take all three pieces off at once. Either tea or coffee cups may be used, and it is, of course, unnecessary to have them match.

Five O'clock Tea.

Some ladies make it a point to be "at home" almost every day at a certain hour, and serve tea or coffee in their drawing-rooms, accompanied by either wafers, maccaroons, fancy cakes, or small delicate sandwiches, and perhaps bouillon for masculine callers.

Such a lady who is bright and interesting, who gives a warm welcome, yet does not

bind any one to a longer stay than the conventional ten minutes, is sure of drawing about her a delightful circle of acquaintances, men and women alike being pleased to drop in on their way home from the city, or from more pretentious gatherings.

If bread is thin enough, butter fresh, cake good, and tea and coffee perfection, you have provided all that is necessary. In warm weather ices or strawberries could be added. In England you will very seldom be given more than this at the best houses, and in Italy, where the afternoon receptions are the most agreeable entertainments imaginable, you will never be offered anything more than dainty little cakes, chocolate and tea. These slight refreshments are usually served in the simplest way.

Teas have been a great "fad," and while not quite so popular, are pretty enough to deserve mention. A table is too often confused in its arrangement of color on account of its changes of courses. This can be entirely done away with by adopting some simple color scheme. A luncheon, or tea, is easier to serve in this fashion.

Amber and white will harmonize with celery, salads, ices and other articles needed at a luncheon. The yellowish white, full of sunlight, harmonizes with amber and can be followed up to deepest bronze. Amber glasses, creamy damask, all the tints from white to bronze, can be used in the dishes. Apricots heaped on amber dishes, ices tinted in harmony, and a great mass of white roses for a centre ornament, are appropriate.

EVENING PARTIES, RECEPTIONS AND SUPPERS

INVITATIONS for an elaborate evening party are sent out ten days or two weeks in advance and are issued in the name of the hostess alone. Husband and wife may be invited together, addressing the envelope to "Mr. and Mrs. John Doe;" and daughters, if there are several, may be included in one invitation as "The Misses Doe." Sons, if there be more than one, receive separate invitations, though they can be included in one as "Messrs. Doe."

But friends, even though sheltered by the same rooftree, must receive separate invitations. To invite "The Misses Doe and Roe," or "Messrs. Brown and Green," or even "Mrs. Doe and Family," would be in bad form. To invite the husband to any entertainments where there are ladies without including the wife would be a direct insult. Invitations may be sent by post or carried by messengers.

Next to elaborate dinners, evening parties, receptions and suppers require the most dressing, the most preparation and are attended with the most formality. Prompt notice should be taken of the invitation, although it is not so important as at dinners, for the reason that it is not necessary for the hostess to know just how many persons will be present. You should contribute to the entertainment of the company in every way possible.

Before supper, cards, conversation, music are made use of to entertain the guests. When dancing is a feature, it does not begin until after supper, and while this amusement is in progress opportunity for conversation, games, etc., should be provided in other rooms for those who do not dance. Rules for going out to supper at a large party are the same as those at a ball.
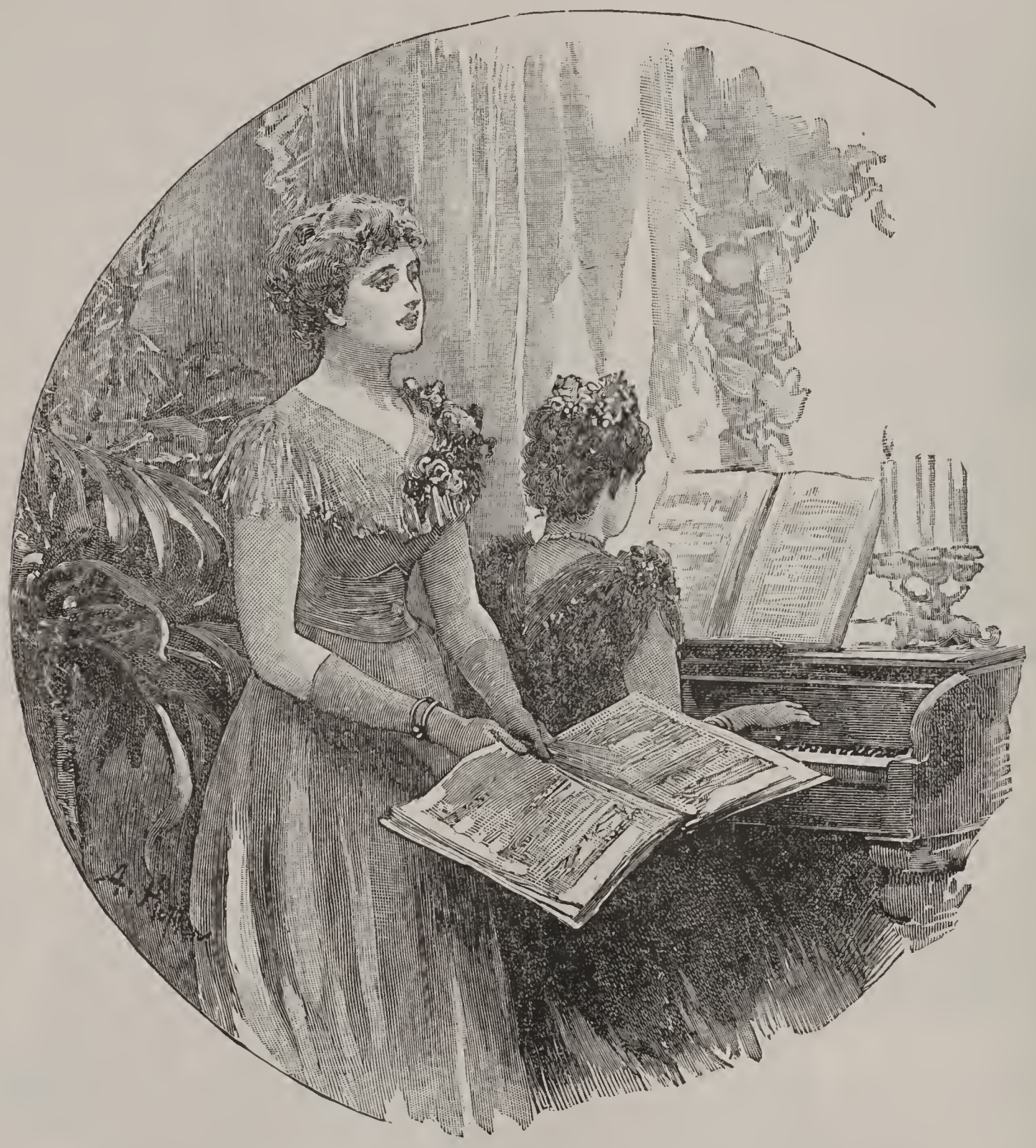


A LAWN PARTY.

If music is one of the features, try and suit its character to the company. Do not play classical music where it cannot possibly be appreciated, and, above all, attempt nothing that cannot be executed perfectly. In singing, let gentlemen remember that if it is an amusing song they are to render, it must be perfectly unexceptional in character. Ladies should bear in mind in singing that it is much better taste in large assemblies to avoid the purely sentimental order of songs,

which, with the large number of beautiful compositions at our disposal, is easily done.

Observe scrupulous silence while others are playing and singing. If you possess any musical accomplishments, and are asked to contribute your share toward the entertainment of others, do so without waiting to be urged; or, if you decline, decline absolutely. Urging should not be resorted to by the hostess, which custom would soon cure a certain class of performers from the disagreeable habit of holding back for repeated solicitations. If you consent to play or sing, do not weary your audience. Two or three stanzas of a song, or four or five pages from a long instrumental piece are sufficient.

Remember, it is only the lady of the house who has the right to ask you to play or sing; to all others give a smiling refusal.



ENTERTAINING THE GUESTS WITH A SONG.

In retiring from a large party it is sufficient to bow politely when expressing the pleasure you have received. And if the hostess or host offer the hand, shake it cordially, but not too roughly.

An after call is required the same as after a ball or dinner party.

RECEPTIONS.

For informal receptions, invitations are most frequently written on the left-hand corner of the hostess' visiting card: MRS. CHARLES GREY, Thursday, from five to eight o'clock.

At an evening reception, the lady should be dressed in handsome home toilet and receive standing. If several ladies receive together, their cards should be enclosed with the invitation. The simplicity of the occasion leaves the hostess the more time to devote to the enjoyment of her guests. Music, both vocal and instrumental, is a great addition to an evening reception.

Serving Refreshments.

Refreshments are generally served informally. The table should be set tastily in the dining room, and supplied with coffee or chocolate at one end and a tea service at the other. Besides these, daintily prepared sandwiches, buns, cakes, ices and fruits are served. If the reception is very select, and the number of guests small, a servant presents a tray with tea, sugar and cream, while another follows with the simple refreshments that should accompany it.

A wedding reception, or a very elaborate evening reception, of course admits of much more ceremony, as well as more substantial refreshments, than small entertainments.

Ladies attend evening receptions in *demi toliette*, with or without bonnets, and gentlemen in full morning dress.

SUPPER PARTIES.

Some lover of this social repast says, "Suppers have always been invested with a peculiar charm. They are the most conversational, the most intimate and the most poetical of all entertainments. They are the favorite repast of men of letters, the inspiration of poets, and a form of hospitality eminent in history. Who has not heard of the *petite soupers* of the Regency and the brilliant minds there assembled?"

Suppers are the popular entertainment of gentlemen, and usually take some distinctive name, such as fish suppers, game suppers, wine suppers, and each has suitable supplies for the table.

The Invitations.

Invitations to suppers may be given in person, by a friendly note, or writing on a card of the host or hostess: "Supper at 10 o'clock, Thursday, December 18th."

The very late city dinners have prevented supper parties from keeping their popularity, but there is no reason why in towns these should not be favorite entertainments.

The same service is proper at a supper as at a dinner, with the exception of soup-plates. Oysters on the half-shell and bouillon served in cups are the first two courses. Then follows the usual order of dishes, such as sweetbreads and green peas, whatever game may be in season, salads of all kinds, then ices, fruits and coffee. It is not quite so heavy a repeast as the elaborate dinner party. Games and salads are served together.

A Game Supper.

A game supper consists of wild fowls and fish, with jellies, ices and bonbons. while a wine supper admits of almost every variety of luscious dishes, differing very little from dinner, except that the delicacies are all cold, and of course no vegetables are served. Fillets of game, boned turkey, cold ham, fish, salads, ices, jellies and creams, are suitable to this style of entertainment.

A Fish Supper.

When a fish supper is given, dishes are generally composed of the products of the

sea or river. This is a fashionable mode of entertainment for the season of Lent. Salads, olives, pickles and sauces are served as relishes. Sweet desserts never accompany a fish supper, but fruits are an appropriate addition. Coffee must be given with all suppers.

Etiquette of Funerals

THE great sorrow brought upon a family by the death of a loved one renders the immediate members of the family incapable of attending to the necessary arrangements for the funeral. The services of an intimate friend, or a relative, should, therefore, be sought. He should receive general instructions from the family, after which he should take entire charge of the arrangements, and relieve them from all care on the subject. If such a person cannot be had, the arrangements may be placed in the hands of the sexton of the church the deceased attended in life, or of some responsible undertaker.

The expenses of the funeral should be in accordance with the means of the family. No false pride should permit the relatives to incur undue expense in order to make a showy funeral. At the same time, affection will dictate that all the marks of respect which you can provide should be paid to the memory of your beloved dead.

In some parts of the country it is customary to send notes of invitation to the funeral to the friends of the deceased and of the family. These invitations should be printed, neatly and simply, on mourning paper, with envelopes to match, and should be delivered by a private messenger. The following is a correct form, the names and dates to be changed to suit the occasion :

"Yourself and family are respectfully invited to attend the funeral of DAVID B. JONES, on Tuesday, March 18, 189–, at 11 o'clock A. M., from his late residence, 1926 Amber Street, to proceed to Laurel Hill Cemetery."

Where the funeral is from a church, the invitation should read :

"Yourself and family are respectfully invited to attend the funeral of DAVID B. JONES, from the Church of the Holy Trinity, on Tuesday, March 18, 189–, at 11 o'clock A. M., to proceed to Laurel Hill Cemetery."

Where such invitations are sent, a list of persons so invited must be given to the person in charge of the funeral, in order that he may provide a sufficient number of carriages. No one to whom an invitation has not been sent should attend such a funeral, nor should those invited permit anything but an important duty to prevent their attendance.

When the funeral is at the house, some

near relative or intimate friend should act as usher and show the company to their seats.

Preserve a decorous silence in the chamber of death—speak as little as possible, and then only in low, subdued tones.

The members of the family are not obliged to recognize their acquaintances. The latter show their sympathy by their presence and considerate silence.

As the coffin is borne from the house to the hearse, gentlemen who may be standing at the door or in the street remove their hats and remain uncovered until it is placed in the hearse.

The pall-bearers should be chosen from among the intimate friends of the deceased, and should correspond to him in age and general character.

With regard to sending flowers, the wishes of the family should be considered. If you are uncertain upon this point, it is safe to send them. They should be simple and tasteful. Letters of condolence are sent to those in bereavement by their intimate friends.

DRESS FOR SPECIAL OCCASIONS

OBSERVE the utmost neatness in every detail of the toilet for home or street. It is an old rule, but a very good one, that a woman may be judged "by her boots, gloves and pocket-handkerchiefs." To this may be added "finger nails," and last but not least, skirt edges. "No matter how elegant the general get-up may be," asserts one fastidious critic, "if a woman's skirt binding is muddy, frayed, or pendant, she is, to my mind, not a gentlewoman."

The style of the person should have much to do with choosing the style of dress for any occasion. Only people lacking the slightest originality of mind would think of blindly following the dictates of fashion without any reference to their own physical style.

Very short women should not wear very large hats. Women with very thin faces should avoid wide hat brims and many plumes. Women with large, full faces should not go to the extreme in wearing small bonnets. To do so is but to exaggerate the defect in each case. No matter what the extremity of style may be, there is always a happy medium from which to choose.

Curls and Ribbons.

Flying curls and a great superabundance of ribbons and fluttering ends belong only to a young girl. To persist in an extremely youthful style of dress long after the passing of youth, instead of adding to the apparent youth of the wearer, simply defeats its own end by exaggerating the defects it was meant to conceal.

Small, thin women should not wear too much black. Let them wear a profusion of fluffy laces about the throat; soft, puffy vests, or, as one writer observes, "have consummate skill in concealing bones."

Short, stout women should see that all adornments, such as folds, plaits, etc., keep

as much as possible in perpendicular lines. It is a mistake to think that perfect plainness will disguise the breadth, it rather emphasizes it. On this style of woman a loosely-fitted wrap has a better effect for the street than a tight, plain garment.

Gloves and Shoes.

To have many dresses is always a mistake even among the very wealthy. They are constantly going out of fashion and unless the owner is continually seen at balls, receptions and other gatherings, they are entirely unnecessary.

The glove of to-day is fitted comfortably. Nothing is more indicative of a lack of taste than to crowd the hand into a glove that is several sizes too small for it. The same might be said of the foot, and with more reason, since a painfully tight shoe not only injures the health, comfort and complexion of the wearer, but is ruinous to all grace of carriage.

There is nothing marks the true lady as much as the perfection of neatness and style in gloves and shoes. To be well gloved and to have one's feet neatly clad, no matter how plain the attire, is to be well dressed.

When to Wear Jewels.

Mme. de Maintenon declared that good taste simply indicates good sense, but many women who boast of good sense seem not to have the slightest idea of the times and places for wearing precious stones.

It is conceded by all authorities that articles of adornment consisting of or containing jewels or precious stones should never be worn in the street. Exception is made in favor of rings and watches. The woman who wishes to adopt correct form will wear the simplest pin to fasten her gown during the morning hours and on the street.

For ceremonious visits, a pretty and ornamental pin of gold is proper, or of gold and enamel, but even then it should have a useful purpose; it should fasten some part of the toilet. The enameled and gold wreaths of myrtle or of forget-me-nots are extremely pretty for these simple pins. So are the true love-nots or a flower of enamel upon gold, but without the all-prevailing diamond dew-drop or center.

Dress for Dinner.

For dinner, a woman may wear the richest gems, it being understood that the function is a ceremonious one, and that she shall wear a low gown. Should she dine in a more democratic way and the men of the family do not wear evening dress, she naturally will wear a high gown or one possibly open a little at the throat. She may wear a pin with a single gem under these circumstances.

For balls, operas or entertainments of corresponding splender, a woman, when she is not herself a hostess, may wear any number of well-chosen jewels. It is quite correct to be sumptuous in this particular, but well to remember that jewels, like flowers, harmonize or do not harmonize, and that emeralds and turquoises, for example, may not be worn in conjunction, because, as the French say, "they swear at each other."

It is not good form to wear ornaments made in the form of beasts or reptiles. The sacred emblem of the cross set in shining jewels and worn at ball or rout, shows a most pitiable ignorance of the eternal fitness of things.

The Face Veil.

In spite of the protestations of oculists, women continue to regard veils as an essential part of their toilets; first, because they are becoming; and, second, because they



TRAVELING COSTUME.

keep their hair in order. The plain tulles and nets, which come in all colors, single and double widths, are always pleasant to wear and less trying to the eyes than the coarser meshes. The veil of Brussels net wrought in sprigged designs is a failure. It is becoming to nobody, and is essentially inartistic.

Opera Dress.

For the opera the most elegant dressing is desirable. Ladies may wear evening gowns, and men dress suits. If they occupy boxes this is almost an obligation. Light colors render the house more attractive—are, in fact, a part of the whole spectacle. Jewels and flowers are there, and those who wear visiting or street costume are in the minority.

If a man wear a dress suit it is expected that the woman will show him sufficient respect to wear an evening gown. The man's costume is donned out of respect for the occasion and the woman, and she betrays utter ignorance or remissness of duty when she does not return the compliment in kind.

Middle-aged women wear the same costume at the opera that they would at a dinner party.

To dress for the theater is a much simpler matter than for the opera. Display is not required here. Elegant visiting or promenade costume is appropriate. Dressy little bonnets or small hats, gloves, either matching the gown or light in tint, complete the theater toilet. If a large hat is worn to the theater, common courtesy demands its removal that those in the rear may see the stage.

Dress for concerts admits of a little more display than for the theater. A silk gown with a little lace and jewelry, and white or light kid gloves.

A dress for traveling should be plain and serviceable; a tint should be chosen that does not show soil or dust. A duster, an ulster or overgarment of some kind made of pongee silk, linen, or whatever material is in vogue, should be worn to protect the costume from smoke and dust.

The hat should be plain and a veil worn to shield the eyes from cinders when traveling by railway. A pair of slightly smoked spectacles are very good for this purpose. Carry an extra wrap and a hand-satchel to hold the needed toilet articles. Let everything else go in the trunk. A woman burdened with "big bundle, little bundle, bandbox and umbrella," is a burden to herself and a terror to others.

The rule for traveling dress is that there should be nothing about a lady to attract attention, but this is relaxed in case of ladies traveling a short distance for a brief visit, who are privileged to wear the dress that suits their purpose.

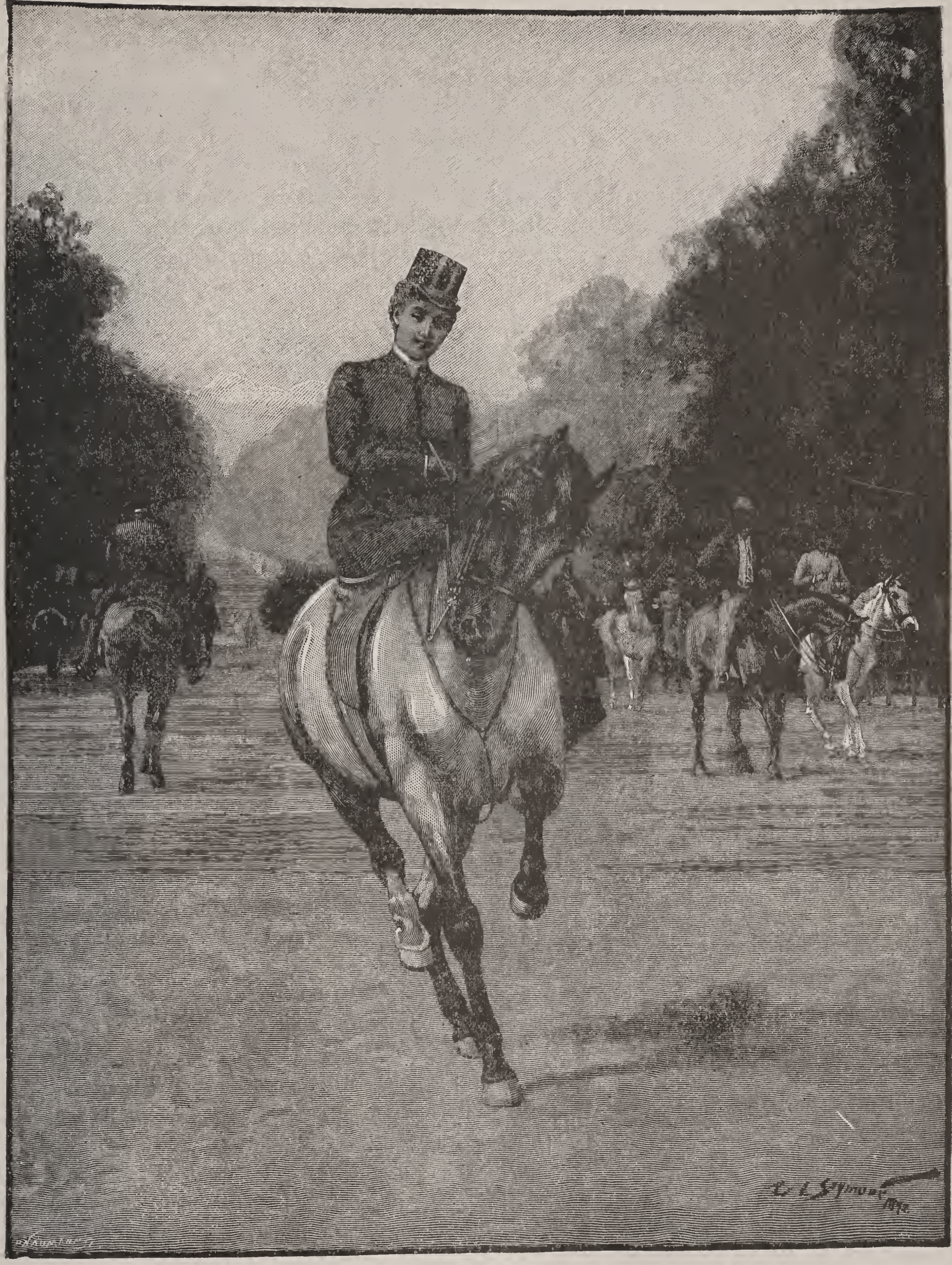
Calling or Visiting Costume.

For morning calls dress quietly in promenade costume. Wear light-colored gloves unless in deep mourning. If driving, carriage dress may be worn. For day receptions the dress may be more elaborate and the bonnet more "dressy."

By not carefully distinguishing between the gowns for different occasions and overdressing at all times, women lose all the advantages of contrast in style. If lace and silk are worn indiscriminately, what is there left for the full dress function?

This should be plain—tailor-made is the best—walking length and of good material. "Fussy" styles should not be chosen for street wear, and the hat or bonnet should be rather plain and harmonize with the gown.

There is much more latitude for display permitted by the carriage dress. Rich ma-



HER MORNING RIDE.

terials, elegant wraps, costly furs, are all allowable here.

Coaching parties, too, have grown to be occasions for most gorgeous costuming. Every hue of the rainbow is to be seen as the lofty tally-ho rolls past, until, so great has become the license of color and richness of material, that the "four hundred" are calling a halt, and soberer tints are beginning to mark this amusement.

Do not wear too many fluttering ribbons, especially if occupying that coveted position —the box seat. It does not add to the skill and accuracy of the driver at a critical moment to have a fluttering ribbon cut like a whip-lash across his eyes.

Dress for Riding.

The riding-habit should be made of broadcloth or some other suitable cloth. The skirt should be weighted by sewing shot in the lower edge of the left-hand breadths. Equestrian tights should be worn. The habit is sometimes worn over another dress-skirt, when, in case of dismounting or accident, the habit-skirt can be slipped off and the rider still left properly attired.

Very long skirts are not worn. The habit should fit perfectly and button to the throat. Linen collar, a pretty tie and linen cuffs are worn, and a leather glove with gauntlet. The hat should be plain and of the prevailing fashion.

Evening Dress for Gentlemen.

Gentlemen's evening dress consists of black trousers, a low-cut black or white vest, dress or "swallow-tail" coat, and white necktie. The linen must be immaculate. A young man wears a standing collar; an elderly man, if he choose, may wear his favorite style, with due deference to the reigning style. One or three studs adorn the bosom.

Properly speaking, white or very light kid gloves are a part of evening dress, but to say whether or not they shall be worn always at a formal dinner is hardly safe. If worn, remove them at the table; but at a ball they are indispensable. On all doubtful occasions it is well to be provided with a pair, to use if wished.

Occasions for Full Dress.

Evening dress is to be worn at balls, large dinners, parties and the opera. It is never worn at church, save in case of an evening wedding. It is never worn anywhere on Sunday. In a small town a dress suit on any occasion is apt to seem an affectation. Never wear a dress suit anywhere before six o'clock in the evening.

"A gentleman never looks more thoroughly a gentleman than in an evening dress," says one writer on etiquette, and it is well for those to whom the occasion is liable to come to learn to wear one gracefully and easily.

In France a dress suit is worn upon nearly all festive occasions. In England the same customs prevail for its use as in our own country.

Morning Dress for Gentlemen.

Black cutaway, or Prince Albert coat (frock coat), black vest, white in summer, light-colored trousers, silk or some other style of stiff hat, and a black necktie. A light coat is never worn with black trousers. This morning dress is worn at church, morning receptions, informal parties, when making calls, and at places of amusement.

The House Beautiful

Artistic Home Decorations

THE humblest home can be made attractive and fulfil all the requirements of comfort and taste. Many large fortunes are put into houses, and very frequently a needless expense. Many of these have been so luxurious and there has been such a painful effort to make them sumptuous, that the men who have built them, and have spent in this way large and needless sums of money, have been made objects of ridicule.

While no one wishes to live in a hut and naturally desires to have pleasant surroundings, there is a wide difference between this feeling and that which seeks to outdo others in gorgeous display. Many of the best and noblest people in this country have lived in log houses, and some of the grandest men America ever produced have slept in garrets where the snow drifted through the roof in winter. Comfort and convenience are the main things to be considered, and these, with a contented heart, are about all that can be desired.

Naturally as the country grows older we have finer mansions, more costly furniture, more brilliant display, and adornments costly and magnificent. All these need not be called in question in the case of those who are able to afford the outlay. Our object here is to give such hints as, if followed out, will make any home attractive and pleasant.

Taste and Comfort.

Many ambitious little housewives, longing to possess picturesque as well as comfortable homes on small means, fail to give their surroundings the proper study. It is surprising how many rooms have picturesque possibilities little suspected or appreciated by their owners, that properly treated would convert these same apartments into abodes of beauty. Many a housewife has been annoyed beyond measure by an unsightly jog that made all her efforts to beautify her room of no avail. Do what she would, the

jog was there in its uncompromising ugliness.

In these days of artistic ingenuity jogs and niches are not only tolerated, but hailed with pleasure, as are other so-called defects, giving opportunity, as they do, for the exercise of an ingenuity that converts them into beauties.

Charming Colors.

A recess in the wall, or a jog, as it is more frequently called, can be tastefully fitted up as a wall bookcase with but little trouble. If the walls of the room are papered—and it to be hoped that they are, as staring white walls are very inartistic—the jog will probably be papered too. But if the paper shows an aggressive pattern it will not serve well as a background for the books and ornaments, and the jog should in such cases be papered with a plain paper of suitable coloring. A flock paper which will look like a velvet lining will be preferable, and the color should be such as to harmonize well with the wall color.

Maroon and golden olives make good backgrounds for books. If the jog runs all the way up to the ceiling, have a panel of lattice in squares let in at the top, and under this set a pole in sockets, secured to side pieces of wood nailed up for the purpose of securing the lattice transom. This pole might be a one inch brass rod, from which to suspend curtains before the shelves. A really elegant appearance will be given to the room if the lattice is nicely made and the curtains are of good color and design.

If the room shows walls coverd with paper of a pronounced pattern and coloring, the lattice might be of mahogany color and the curtains of perfectly plain material. If, however, the room has walls of a single color, the curtains may show either a set figure at intervals or else an all over figure, but the colors should be quiet and subdued. The shelves of this impromptu bookcase may be of simple pine or some other wood that can be stained by rubbing in thin oil paint of the desired color.

If the shelves are not all needed for books, some may be utilized for the keeping and display of bric-a-brac. In a bedroom the jog may be turned into a clothespress, with shelves, or into a wardrobe or closet.

Cosy Recesses.

Niches may be readily converted into wall cabinets by means of lattice doors made to fit the opening, or by means of a small transom, with curtain hanging directly beneath. A small jog, or niche, by means of fancy locked doors, may be changed into a medicine closet or a repository for private pagers. A more fanciful treatment with Japanese fretwork and shelves will make a charming wall cabinet for bric-a-brac. Much depends upon the size, form and location as to what one may make of such recesses.

A square, stiff looking apartment may be made much pleasanter by a picturesque treatment of one or more of the corners. For instance, a lattice transom placed across the corner, with a brass pole and handsome curtains beneath it, will furnish a cosy corner in which may be placed a triangular divan, with two square pillows. A triangular wooden box, with a mattress to fit, covered with some oriental looking dark fabric, such, for instance, as a Chinese rug or a Bagdad couch rug, with two large square pillows to stand against the wall, will be very pleasing, or the corner may contain a table and chair, or a desk and chair, to be partly revealed by the half withdrawn curtains.

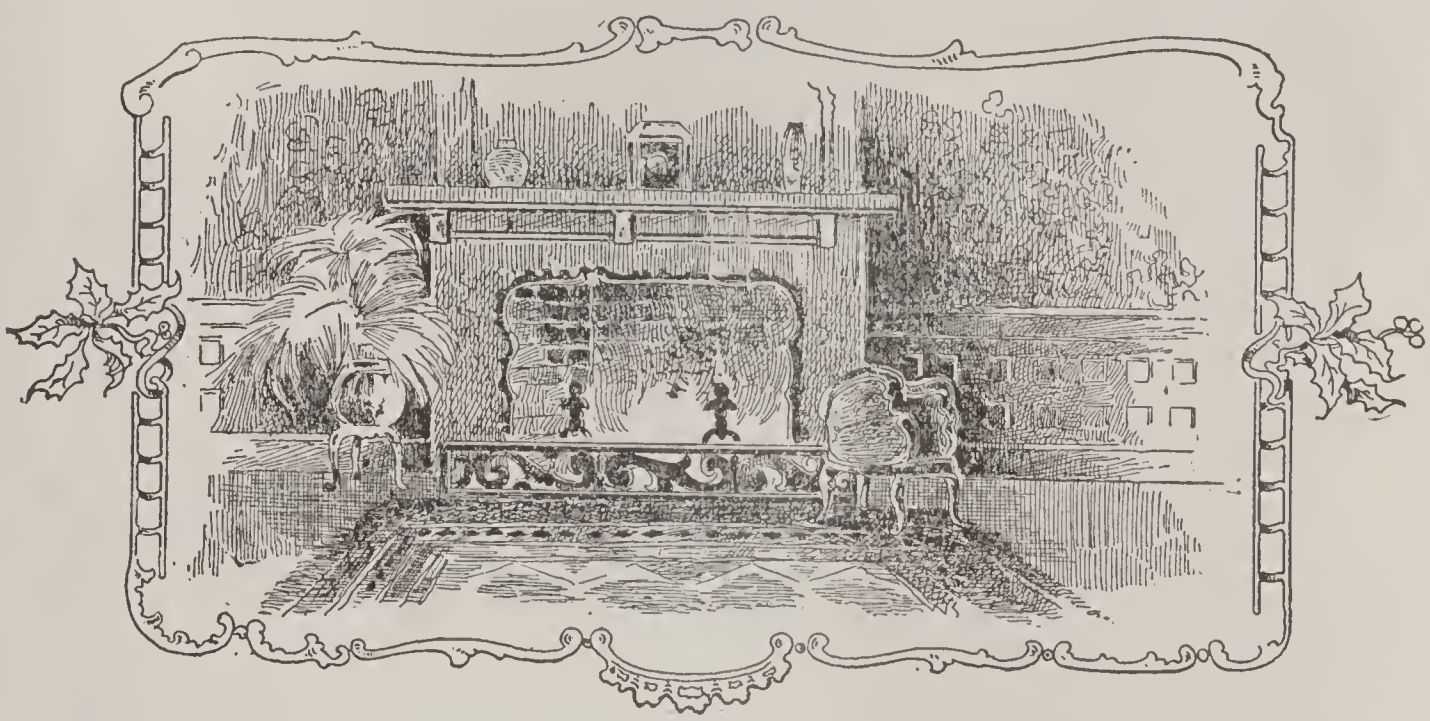
Two corners of a large room might be arranged in this manner, giving a charming

variety to the form of the room, besides giving extra space for certain bits of furnishing. In a dining-room one or more corners may be artistically fitted with glass doors and serve for china closets. Alcoves in bedrooms are always more pleasing when curtained off with some dainty furnishing revealed from behind the curtains, and an alcove in a sitting-room may be curtained off to form a very attractive library.

Especially pleasing is the old-fashioned window, with its deeply set and paneled casement, affording ample space for a pleasant seat. An old-fashioned cottage window—one of the long, low windows set above a long low seat, with paneled back and sides—is a treasure trove to the lover of the picturesque, If it is an eastern or northern window it will be best to have curtains across its whole width, run on two slender brass rods, the curtains to be two or three or four, according to the width of the window; if two, trimmed at the inner edge with tassel braid; or if four, the two centre ones thus treated.

Cream swiss, powdered with large dots in cream color or in deep pink or yellow, will make beautiful curtains for such a window. If the window has a southern or western aspect, a holland shade will be necessary over the sash curtains. If such a window has a broad sill, a few potted plants will give a finishing touch to its beauty. The long low seat should have its long or divided cushion covered with some pretty and durable material, with several small pillows.

High-topped sideboards have gone out along with that monstrosity, the bedstead with that towering headboard. A pretty and artistic fancy is the low buffet without any top at all, that prevailed a century ago. One of the prettiest effects in a dining-room is produced by a collection of plates hung over such a sideboard. Indeed, you can scarcely use too much china in dining-room decoration, stopping short, of course, of any suggestion of a wholesale china house. Narrow shelves with low railings over the doors, the cabinet mantel with its shelves and nooks, a corner cabinet with glass front and sides, a hanging wall cabinet may all be used for the display of odd or pretty pieces.

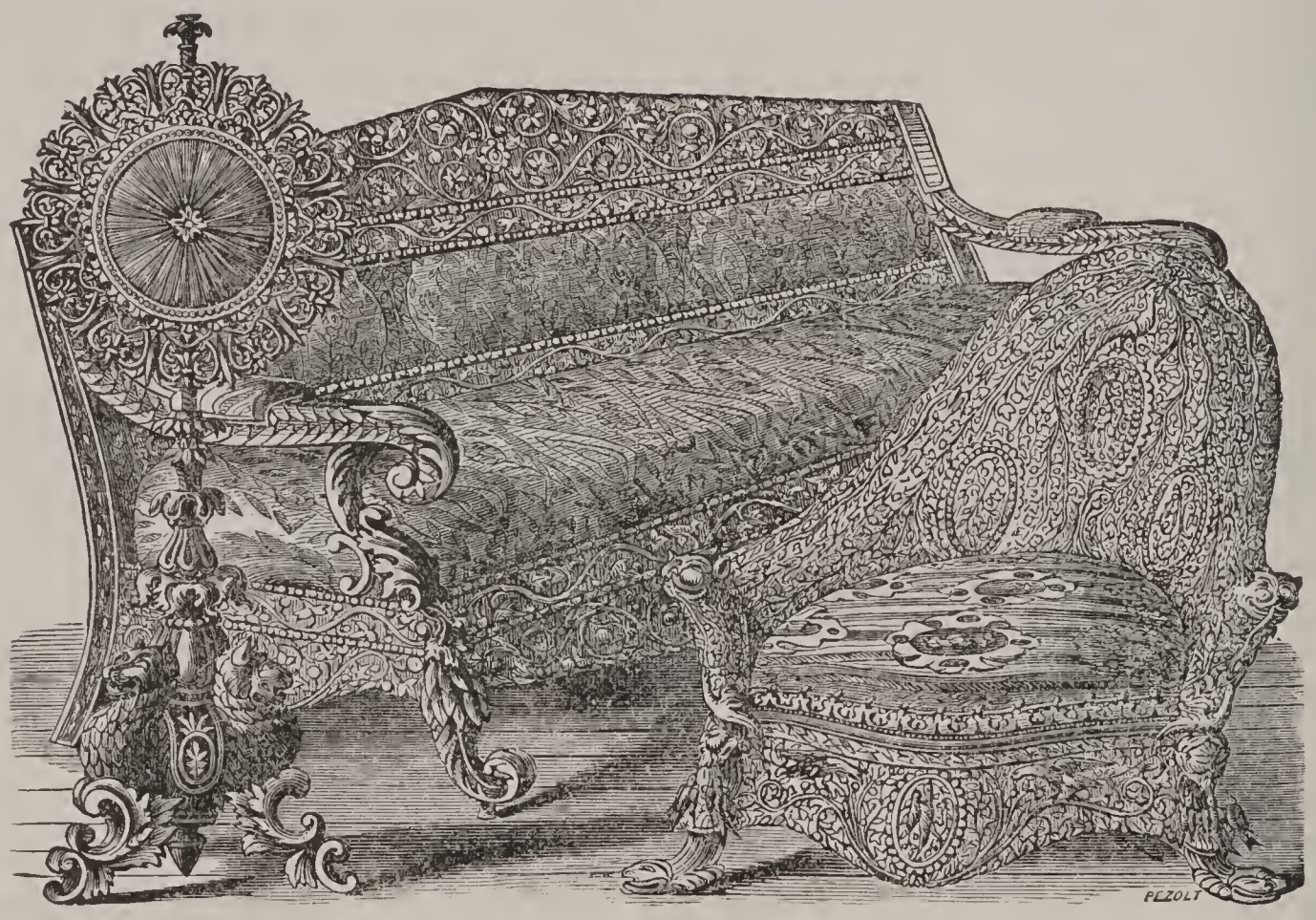


ARTISTIC FIREPLACE.

An excellent feature of modern houses—suburban houses in particular—is the reception hall, which is generally nearly square. This is not difficult to furnish, and if it be of generous size, it is generally arranged as a sort of combined sitting and reception-room.

If the hall be small, one may have a hall rack and a settle beneath, one with a box seat preferred, as this form provides a useful receptacle for the prompt disposal of wraps, mackintoshes, rubber shoes, etc., where they will be hidden from public view and still be easy of excess.

If there is a spare corner, a "cozy" may be fitted up; or, if not, and a window is available, a broad, low seat will be an attractive feature. A small, low table and a side table with a drawer in it, a number of odd sets and browns. When light is at a premium, gladden the sight with its nearest equivalent, yellow, in its variety. This would be a most distracting color in the glaring light of the noonday sun, but when used upon the walls of a dark and dismal hall it is altogether different. Choice should be made of other colors that will prove harmonious, always the warm rich colors, never the cold. With such a setting any shade of finish in oak or mahogany woodwork will be fitting.



RICH PIECES OF FURNITURE.

chairs, some that are easy and some selected for their quaintness, must not be omitted. One or more growing plants add much to the picturesque appearance of a hall, and as a background for these a pretty threefold screen may be utilized with good effect.

The selection of the proper scheme of coloring is an important consideration. When the hall receives a plentiful supply of sunlight at all times of the day, a cool scale of coloring should be selected. With a north room, be generous with the warm rich tints, the dull reds, olives and golden rus-

We are all of us by nature fire worshipers and the altar of home is, or should be, the glowing, open fire. Next to this are the great, clear windows meant to admit the glorious glances of the fire worshiper's sun.

As to the first, if you can have but one, the house or the fireplace, give up the house and keep the fire. If you wish to test the soundness of this advice, build a house, furnish it extravagantly and supply furnace heat to all but one room, and in that room build upon an ample hearth a glowing fire of hickory logs, and in the presence of that

genial blaze, upon the bare floor of that unfurnished room, will gather the united household. The broader this family hearth the better. The old English baronial halls with their mighty fireplaces and their great stone hearths had more of light and beauty than all our modern improvements.

Folding doors between communicating rooms are seldom closed. An ordinary chair within a few feet of the space never looks well. It shows its back to one room or the other and is in the way.

A divan is an addition to any decorative arrangement of either room. It does not



SELECTING PAINTINGS FOR HOME DECORATION.

Chairs and sofas we have without end in variety and beauty. Every alcove and nook in every possible sort of room has been thought of and provided for except the one place that exists in almost every house and is the one place where people are always wanting to sit—that is the doorway itself. interfere with any graceful drapery that may be arranged at the door. It is decidly useful, convenient, and gives a certain touch of the unusual to the room.

Be careful of the pictures and their relations to the walls. Rooms should rather be a setting for the groups of people in it.

Too much gilding, too many gaudy oil paintings attract the eye and detract the mind.

One authority objects to portraits as a decoration. "Their presence, if at all impressive. is too stimulating."

Picture frames should never be so gorgeous as to distract the mind from the picture. Frames are to protect the picture and relate it to the walls.

Group etchings together and put engravings in the portfolio. Over low bookcases pictures should be large, and in this form they give a style to the room. Water colors look admirable if treated in this manner, and if two bookcases are put together so as to form one, divide the pictures by a bracket, on which place a jar of some unique pattern.

Small rooms require medium-size pictures, which can be hung one above the other, and three may even be placed on line with good effect. For an ideal head in oil the frame should be of broad gilt. Hang it in a good light, and on one side group two small water-color pieces in the fashionable white band frame. For an oblong picture a small sketch under it looks well equipped.

A very large and beautiful picture sometimes sets the keynote of color for the apartment. Otherwise, subordinate them as decorations to the colorings of the room, as in the ivory and gold room.

In a room where there are to be many pictures, give rather a neutral color to the walls, merely as a picture background. Where there are finely decorated walls pictures are rather out of place, since one decoration spoils the effect of the other.

THE Art of Correspondence

FORMS FOR LETTERS

POLITENESS may be shown to great advantage in the art of writing or answering letters. Too many persons are guilty of neglecting their friends; in this way estrangements often chill the friendship that has lasted long, and would last longer still if it were cultivated by those little attentions and courtesies that go so far toward making up the deportment of the true lady or gentleman. Therefore one of the first duties claiming our attention is that of letter-writing.

Fond mothers and lovers are *the* letter writers of this age, almost all other correspondence being merely notes. At present no emblazoned crests or elaborate monograms or initial letters are used in the corner of note paper or stamped on our stationery. The frequency and speed with which communications now fly across a city or a continent, also do away with the sealing-wax, and this clear red, oval fixture of our grandfathers has almost totally disappeared; this elegant formal and ceremonious way is supplanted by what we call more modern style.

There is one fashion which has never changed, and is always in good taste: use good, plain, thick note paper, folded square and put in a square envelope; no mistake can be made in using this kind of stationery in any part of the world.

Use of Capital Letters.

There is, however, no law forbidding the use of monograms, some ladies still prefer it, and use the style most familiar to their friends; it is a fashion past, not of the present. Invariably use black ink, no other is in good taste; it gives the written characters great distinctness and is the only fashionable medium.

The capital letters only set apart the sentences and paragraphs, but while their proper use adds greatly to the beauty of an epistle, their omission or improper use will make the pages present a perfectly absurd appearance.

Begin every paragraph and every sentence following a period with a capital letter.

Begin all proper names, all titles, as President, Vice-President, General, Doctor or Captain; all names of places, as Chicago, Long Branch, Niagara; the words, North, South, East, West, and their compounds and abbreviations, North-east, S. W., with a capital letter.

Begin the names of the Deity with a capital letter.

Begin every line of poetry, all titles of books, and usually each important word of the title, as Bancroft's History of the United States, the name of any historical event, as the Civil War, with a capital letter.

The pronoun I and the interjection O must invariably be written with a capital letter.

Begin all the names of the month, as June, April, and all addresses as Dear Sir, Dear Madam, with a capital letter.

Capital letters must never be placed in the middle of a word.

Be very careful not to repeat often the same word. Tautology is a crime in writing.

Do not underline unless in extreme cases.

Never abbreviate unless in business. Dates should be given in figures, and money in parenthesis, thus ($15,000). Date carefully.

Notes of Invitation

To a Picnic Party.

BUFFALO, July 3, 189–.

MY DEAR SIR:

We are endeavoring to get up a small excursion to visit Niagara on the 10th of this month. Will you do us the favor of making one of our number? Mrs. ——— and my family desire their compliments, and request me to mention that they have taken upon themselves the task of providing the "creature comforts" for that occasion, and trust that their exertions will meet with unanimous approval. Should you have no previous engagement for that day, and feel disposed to join our party, a carriage will be at your door by 8 o'clock on Tuesday morning; and believe me to be,

My dear sir, yours most sincerely.

To —— ——, Esq.

P. S.—The favor of an early answer will oblige.

To a Boating Party.

July 12, 189—.

DEAR ———:

Jack ———, myself, and four others are going down to Richmond in a six-oared boat next Wednesday. Now, you are a jolly fellow and a good steersman, so I hope you will give us your company and your services; indeed, we will take no excuse. We shall set out from my lodging at 9 o'clock, without fail.

Yours truly, in haste,

To a Private Dinner.

FRANKLIN SQUARE, Nov. 12, 189—.

DEAR MR. BENSON:

My old friend Richard Roy is coming to take a chop with me on Saturday the 15th, and I hope you will come and join us at six o'clock. I know you are not partial to large parties, so trust you will think us two sufficient company.

Yours ever truly,

G. H. PERCIVAL.

To a Social Party.

Mr. and Mrs. Thompson request the pleasure of Mr. and Mrs. James's company, on Wednesday evening next, at eight o'clock, to join a social party. An immediate answer will much oblige.

Fifth Avenue, January 9th.

Answer, Accepting.

Mr. and Mrs. James will be most happy to avail themselves of Mr. and Mrs. Thompson's kind invitation to join their social party as requested.

Lennox Street, January 10th.

Answer, Declining.

Mr. and Mrs. James greatly regret their inability to accept Mr. and Mrs. Thompson's kind invitation to join their social party. Nothing would have afforded them more pleasure than to be present, but family affliction prevents them.

Lennox Street, January 10th.

To an Excursion.

NEW YORK, July 20, 189–.

MY DEAR SIR:

May I hope that you will allow your boys and girls to join mine in an excursion to Glen Cove on the 27th? We expect to make rather a large party, and have, therefore, made arrangements to dine at the Cove House.

In haste, believe me, my dear sir, yours ever sincerely.

Mr. ———.

To an Evening Company.

MY DEAR GLADYS: A few friends will be here on Wednesday evening next, to take a social cup of tea, and chat about mankind in particular. Give us the pleasure of your company. DELIA SCOTT.

Prince Street, Saturday morning.

MY DEAR DELIA: It affords me great pleasure to inform you that I shall join your party on Wednesday evening next. GLADYS PENRYN.

Spring Street, Saturday afternoon.

To a Visit.

ST. PAUL, MINN., July 2, 189–.

MY DEAR FRIEND:

Being now settled at my country residence for the summer, I lose no time in soliciting the pleasure of your company, together with that of your family, and trust that you will make it convenient to pass a month or six weeks with us in our rural retirement. I believe that you are too well aware of my friendship, to doubt every thing will be done to render your stay with us agreeable.

My wife desires me to inform you, that unless you comply with this, our mutual request, your name will be erased from her good books.

Very faithfully yours.

Accepting the Foregoing.

MY DEAR SIR: CHICAGO, July 4, 189–.

Your very friendly and polite invitation demands my immediate attention. You may be assured, that I never willingly resign the pleasure of enjoying your society; and, on the present occasion, I am extremely happy to say, that I have nothing to prevent my acceptance of your very kind offer. You may, therefore, expect me and my family in the course of ten days. I hope we shall be able to prevail on you and your good lady to return with us.

Requesting you to be assured, that I am truly sensible of your repeated acts of friendly attention towards me, I am, dear sir, with best wishes for your health and happiness (in which my wife unites),

Very affectionately.

Declining the Foregoing.

CHICAGO, July 5, 189–.

MY WORTHY FRIEND:

I am truly obliged to you for your very friendly invitation, and sincerely lament that the pressure of my business prevents me at present from complying with it; though I hope this will not induce your amiable lady to erase my name from her good books, especially as it is no fault of mine, my inclination being decidedly in favor of the visit.

My family unite with me in the kindest remembrances to you all; and I subscribe myself.

Your obliged friend.

To a Bachelor Party.

Sept. 20, 189–.

MY DEAR FRED:

My festive self and half-a-dozen other good fellows are going to devote a few hours on Thursday evening to having a good time. I hope you will make one, as we have not enjoyed "the feast of reason and flow of soul" in each other's company for some time past.

Believe me, dear Alfred,

Yours ever,

To ALFRED BELLVILLE, Esq. JOHN BARRY.

A Lady to Her Friend in the City.

EDDINGTON, Bucks Co., Pa., June 4, 189–.

MY DEAR FRIEND:

I need scarcely tell you that I always feel the greatest pleasure in your society, and am selfish enough on the present occasion to covet it for a month, or for a longer period, should it suit your convenience. Your sincere friend,

JENNIE RICHMAN.

To Mrs. LETTY JONES, Fifth Ave., N. Y.

Love Letters

A Lover's Letter.

No. 966 Butler Ave., July 16, 189–.

My Dearest Edith:

I can no longer restrain myself from writing to you, dearest and best of girls, what I have often been on the point of saying to you. I love you so much that I cannot find words in which to express my feelings. I have loved you from the very first day we met, and always shall. Do you blame me because I write so freely? I should be unworthy of you if I did not tell you the whole truth. Edith, can you love me in return? I am sure I shall not be able to bear it if your answer is unfavorable. I will study your every wish if you will give me the right to do so. May I hope? Send just one kind word to

Your sincere adorer,

Miss Edith Fanshaw. James Martin.

A Favorable Reply.

219 Sixteenth St., July 17.

My Dear James:

Thank you for your dear letter. It has made me very happy. My heart has long been yours, as I will own, although you may think less of me for the frank avowal, and I am blushing for myself while I make it. Of course we must consult our parents before making any serious engagement. Meanwhile, believe me,

Sincerely yours,

Mr. James Martin. Edith.

Making a Declaration.

No. 20 Green St., March 26, 189–.

My Dear Miss Jerome:

You cannot but have been aware for some time past that my feelings toward you have been stronger than those of mere friendship. Our long acquaintance has given me ample opportunity to learn the excellencies of your character, and to prize them at their full value. It has also afforded you a like opportunity to judge whether I possess those characteristics which you would desire in a husband. Am I presumptuous in hoping that you will consent to be my wife? Until I receive your answer I shall remain

Your anxious but no less ardent admirer,

Miss Cora A. Jerome. Robert Searles.

A Favorable Reply.

187 Park Ave., March 27, 189–.

My Dear Mr. Searles:

How can I thank you for the honor you have done me in asking me to be your wife? It affords me the deepest satisfaction to assure you that my sentiments toward you are most favorable, and that I shall be both proud and happy to regard you as my future husband.

Yours, most sincerely,

Mr. Robert Searles. Cora A. Jerome.

Engaged to Another.

187 Park Ave., March 27, 189–.

Dear Sir:

While confessing myself honored by the preference avowed for me by one whom I have every reason to respect as a gentlemen, I feel that it would be dishonorable in me to keep you in any suspense, where the answer must be unfavorable.

For some time past I have been engaged to a gentleman, from whom I have every reason to expect happiness and comfort. I must, therefore, hope that you will henceforth regard me only in the light of a friend; and, with the sincere wish that such a partner as you deserve may speedily fall to your lot,

Sincerely your friend,

Cora A. Jerome.

Mr. Robert Searles.

To the Lady's Father.

Dear Sir:

Having made an application to your beloved daughter for her hand, she has given her consent, provided you and her mother will condescend to sanction it. This, I flatter myself, you will do, my circumstances, family, and character, being well



known to you both. I shall only add, that my happiness or misery through life depends upon your reply; and that I will make any settlement upon your dear daughter which you may judge necessary. My happiness will be found on the promoting of hers, with the possession of your esteem and approbation. Entreating you to give a favorable reply, I have the honor, my dear sir, to subscribe myself,

Your humble servant,

The Father's Answer.

DEAR SIR:

In reply to the letter you did me the honor of writing, I must remark, that neither my wife nor myself have ever interfered with the wishes of our excellent daughter; her whole conduct being governed with such prudence that no room was left for advice.

Your affection being mutual, we have only to observe that we shall be highly gratified in giving our girl to you, and we doubt not that you will enjoy as much happiness in the married state as this life will admit of. In regard to ourselves, you may be assurred that you possess our respect and affection; were this not the case, we should not so readily resign to your protection our greatest treasure.

My good wife entirely coincides with what I have said; we shall, therefore, expect to see you on ——— next, when everything shall be arranged for your union. I am, dear sir,

Yours, very affectionately,

The Father's Negative Answer.

DEAR SIR:

I make no doubt of the truth of your assertions, but as I think my daughter too young to enter into such a serious engagement, I request I may hear no more of your passion for the present; in every other respect,

I am your most obedient,

An Apparent Slight.

MY DEAREST ———:

How grieved am I that you should think me capable of wavering in my affection towards you, and inflicting a slight upon one in whom my whole hopes of happiness are centered! Believe me, my attentions to Miss———were never intended for anything more than common courtesy. My long acquaintance with her father, and my knowledge of her amiable character—as well as the circumstance of her being a comparative stranger to the———'s,—such were my sole reasons for paying more attention to her than I might otherwise have done.

Pray rest confident in the belief that my affection for you is as unchanging as my regret is great that I should ever have given you cause to doubt it, and believe me, dearest,

Yours ever sincerely and devotedly.

Breaking an Engagement.

DES MOINES, June 15, 189–.

MISS BELEW:

I am fearful that we are too precipitate in forming a mutual engagement. Our dispositions and tastes are so antagonistical that there would be a continual conflict between our inclinations, which would be productive of much sorrow.

Therefore, I desire to be released from the engagement, confident that we never could be happy as wife and husband.

Respectfully yours,

PAUL WOODRUFF.

MISS MYRTLE BELEW.

Answer.

1365 BROAD AVE., June 17, 189–.

SIR.

The contents of your letter, received this day, will entail upon me years of misery—hopeless and despairing misery! A man who will so debase himself, who is so devoid of feeling and principle, deserves the execration of every honorable mind. I have been deceived, and the good qualities I thought you possessed, and that warmed my love into life, are now proved, by the inconsistency of your conduct, to have been but the hypocrite's art.

Farewell.

MYRTLE BELLEW.

Confessing a Change of Feeling.

AUBURN, March 18, 189–.

MY DEAR SIR:

I fear my avowal may give you some pain; but it is better to be sincere and open in matters where the happiness of another is concerned.

To speak plainly, then, I feel that my sentiments in regard to yourself are no longer what they were. While my esteem for your character remains unshaken, I still cannot blind myself to the fact that I do not cherish that affection which a wife ought to feel for her husband, and without which the married life is one continual scene of torment and vexation. You will not, I am sure, give me credit for acting from mere fickleness—especially as I do not at present entertain a partiality for any other; but you must pardon me when I express my firm belief that all correspondence between us had better cease, and that such letters as have passed between us should be returned at the first convenient opportunity.

Assuring you that, as a friend, I shall constantly remember you with esteem, I remain, my dear sir,

Very respectfully,

MR. E. P. DAVIS. NELLIE H. SPENSER.

Proposing a Day for the Nuptials.

OAKLAND, February 28, 189–.

MY DEAR BLANCHE:

The happy day to which I have looked forward as the blissful reward of our mutual constancy is not far distant, if the proposal I am now about to make should meet the approbation of yourself and parents. It is this: that our nuptial ceremony may be performed on the twenty-fifth of next month, and in the Third Presbyterian Church. I hope to have the pleasure of seeing you soon; we can then give the subject a lengthened discussion. If, however, you should wish to write before we meet, you can mention briefly whether the day I have fixed will suit the convenience of yourself and family; and in the hope that I may claim shortly the privilege and honor of making you my bride for a long and happy life and of signing myself your affectionate husband,

Believe me, for the present,

Your sincerest friend and most attached

MISS BLANCHE RIMMON. RAYMOND BEVERLY.

A Favorable Answer.

OAKLAND, March 1, 189–.

MY DEAR RAYMOND:

The affectionate letter which I have just received is another convincing proof of your attachment. Upon perusing it, I find that you have imposed upon me a somewhat delicate duty, but one to which you may conclude I feel no aversion. You wish me to name some day, convenient to myself and relatives, for the performance of our nuptial ceremony. You likewise appear anxious that that day, to which we have looked forward as the most propitious of our future life, may not be protracted to a distant period. As far as my own choice is concerned, you may rest assured that I shall not interpose the least delay; but as I have relatives and friends, by whose convenience I must, as you are aware, be in some measure restrained, I will consult them without loss of time, and at the earliest opportunity you shall hear the decision to which we may come.

Yours ever affectionately,

MR. RAYMOND BEVERLY. BLANCHE RIMMON.



To Friends, on a Marriage Anniversary.

MONTGOMERY, ALA., October 5, 189–.

MY DEAR MR. AND MRS. TREVELYAN:

The announcement of the fifteenth anniversary of your wedding recalls the long period of time through which it has been our happy privilege to enjoy an uninterrupted friendship. This is your crystal wedding, and you will allow me to say that I trust your lives will always be as bright and sparkling as the gifts which you will receive.

I am sure you are proving the blessedness of married life, and they always do who enjoy mutual confidence, sympathy and support. The darkness which at times has crossed the path along which you have now travelled for fifteen years has always had its silver lining, and my wish is that no greater sorrows may overtake you in the future than have fallen to your lot already. These you have borne with Christian patience, and have thus transformed them into benedictions.

Accept my hearty congratulations on this anniversary of your married life, and may another, which shall be tinged with silver, and another still, enriched with gold, fall to your lot.

Very affectionately yours.

To a Lady on Her Marriage Engagement.

VICKSBURG, Sept. 20, 189–.

MY DEAR ——:

No one, I believe, can be more desirous to hear of your welfare and your prosperous settlement in the marriage state than myself. I have long been sensible of your worth, your goodness of heart, your rectitude of principle, and your warmth of friendship.

Enviable among men will be the lot of him who is destined to become your partner for life; and fortunate, indeed, was Mr. ——— in that introduction which first presented you to his notice. As for Mr. ———, I need scarcely observe that I approve of your choice, in which you have shown a discrimination that does credit to your taste, and to that good sense which has been the guide of your past life.

Adieu, and believe me to be, my dear ———,

Yours most sincerely and affectionately,

To a Gentleman.

PHILADELPHIA, Jan. 6, 189–.

DEAR OLD FELLOW:

And so you really are to be a Benedict! Well! I have no objection, provided you feel convinced that it is a measure likely to tend to your happiness. For myself, I am still a bachelor, although I do not know what such temptation as you appear to have undergone might not do towards upsetting my present resolutions. You know I have no antipathy to matrimony: but, unlike yourself, I have not independent means sufficient to render me fearless of consequences, and should not be disposed to involve any woman, whom I could like sufficiently to make my wife, in a doubtful state of circumstances, if not in a discomfort which must be painful to a man of proper feeling and honor. At the same time, believe me, I cordially sympathize with your delight at the prospect of an agreeable union, and wish sincerely that every happiness may be the result.

Ever truly yours,

To a Friend, on His Good Fortune.

LOUISVILLE, KY., Feb. 10, 189–.

MY DEAR HOWARD:

The news of your good fortune gives me great satisfaction. No one can possess true friendship without rejoicing in the prosperity of a friend. To one who has always been manly, true and noble, and who has labored persistently toward a particular end, success must be extremely gratifying.

It will ever be my delight to hear that you are prospering in your undertakings, and if in any way I can serve you, you can rely upon my best endeavors. With every good wish for yourself and Mrs. Kerr.

Ever faithfully yours,

To a Friend on the Birth of a Son.

ST. LOUIS, MO., June 15, 189–.

DEAR OLD FRIEND:

The happy announcement that a son and heir has been born to you, gives me extreme satisfaction. I always thought you would distinguish yourself in some way, and would do something whereby your name might descend to posterity. And now, my worthy chum, it seems you have done it.

I will not draw any picture of the cares and anxieties of fatherhood, such as carrying a squalling youngster on your arm at 3 o'clock in the morning, running for the doctor when the little one has spasms of wind colic, opening your eyes with astonishment at bills for shoes, dresses and toys, but will content myself with sharing the joy which you feel over the new arrival, and reminding you that whatever may be the cares and anxieties which children bring with them, in their intelligence, their artlessness, their love, there is abundant compensation and delight. Wishing you and the happy mother, as well as the young gentleman who will soon have the honor of calling you papa, the best of Heaven's blessings, I remain

Yours most sincerely,

To a Daughter on Her Birthday.

MY DEAREST CHILD:

Your father, brothers and sisters all unite with me in sending you a thousand good wishes on this your fifteenth anniversary. We could all have desired that circumstances would have admitted of your spending it with us; but feeling in these matters must sometimes be sacrificed for our good, and our selfish delights must not be permitted to interfere with the prospects of those dear to us. The package which accompanies this letter contains not only some trifling tokens of affection from all of us, but the materials for a little entertainment which, I have no doubt, Mrs. Boynton will allow you to give to your school-fellows, as I have written to beg a half-holiday on the occasion. God bless you, my dear child! and that every succeeding year may see you increase in all that is desirable in body and mind, is the earnest prayer of your ever anxious parents. With best compliments to your mistress and teachers,

Believe me, your ever affectionate mother,

TO MISS LETTIE THOMAS. MARGARET THOMAS.

A Gentleman to His Son, on the Latter's Marriage.

PHILADELPHIA, Jan. 30, 189–.

MY DEAR SON:

It is with no small pleasure, and a slight feeling of parental pride, that I now congratulate you upon your recent change of state. That you have my best and heartiest wishes for your future happiness you already know; but I feel natural pleasure in again giving them expression; and here I have to add that no parent could join in those wishes with more fervent sincerity than your dear and kind mother.

Your ever affectionate father,

JOHN PAUL JONES.

TO HENRY PAUL JONES, Pottstown, Pa.

LETTERS OF Condolence

On the Death of a Mother.

TEWKESBURY, MASS., Nov. 8, 189-.

MY DEAR WILLIAM:

You have lost your mother. There is a very wail in the words. She may never be replaced. The dear good lady has passed away to a better land, cheered by the knowledge of your love and affectionate tenderness, consoled by the thought that her teaching, when you were a little boy at her knee, has not been in vain, and that she leaves behind her for a little while a son who treads the path of rectitude and of honor. Dear William, ever remember that your darling mother watches you from on high, and as she was devoted to you in life, so is she devoted to you in death.

God sustain you under this heavy affliction.

Your true friend.

MORTIMER MONSON.

On the Death of a Child.

DEAREST SISTER:

I cannot write what is in my heart for you to-day; it is too full—filled with a double sorrow, for you and for myself. Tears blind me; my pen trembles in my hand. Oh! to be near you! to clasp you in my arms! to draw your head to my bosom and weep with you! Darling, God comfort you, I cannot.

ELIZABETH.

On the Death of a Husband.

ROCHESTER, N. Y., Nov. 29, 189-.

MY DEAR MRS. BURLEIGH:

Words fail to convey my feelings of sorrow on receipt of the intelligence of the death of my old and esteemed friend, your late husband. My own grief at the loss of a true friend teaches me how crushing must be your affliction. May the Almighty in his goodness console you in this dark hour of your tribulation.

Believe me always your true and sincere friend,

D. C. JACKSON.

On the Death of a Wife.

PROVIDENCE, R. I., Nov. 8, 189-.

MY DEAR ARTHUR:

I know how futile it is to address words, idle words, to you in this moment of supreme anguish, with which it has pleased God to visit you, and shall not say more than that the loss of your pure, good, and beautiful wife is a source of deep sorrow to the numerous friends who had the privilege of knowing her, and to none more than

Yours, in deep sympathy and affection,

FRANK FOSTER.

On the Death of a Son.

NORWALK, CONN., June 3, 189-.

MY DEAR JULIA:

If God has plucked the bright blossom from your home it is for a purpose none of us dare divine. He alone can pour balm upon your crushed heart. The holy joy is yours of knowing that angel eyes now watch for your coming, and that your beautiful boy will receive you when "life's dark day is done."

If the tenderest sympathy could soothe you, dear Julia, learn that you have it from your

Friend,

LAURA.

La Fayette to Jefferson, Announcing the Death of Madame de La Fayette.

ANTEUIL, January 11, 1808.

MY DEAR FRIEND:

The constant mourning of your heart will be deepened by the grief I am doomed to impart to you. Who better than you can sympathize for the loss of a beloved wife? The angel who for thirty-four years has blessed my life, was to you an affectionate, grateful friend. Pity me, my dear Jefferson, and believe me, forever, with all my heart,

Yours,

LA FAYETTE.

On a Sudden Reverse of Fortune.

STANFORD, CONN., July 6, 189–.

MY DEAR FRIEND:

Hackneyed phrases of condolence never yet comforted a man in the hour of trouble, and I am not going to try their effect in your case. And yet, let me say, in heartfelt earnest, that I was deeply pained to hear of your sudden and unexpected reverse of fortune. Misfortune is very hard to bear when it falls upon one like a flash of lightning from a clear sky, without any warning. But do not be discouraged. When Senator Benton saw the work of many years consumed in ten minutes, he took the matter coolly, went to work again, and saw the damaged repaired before his death. So, I hope, will you. There is no motto like "Try again" for those whom fate has stricken down. Besides, there are better things than wealth, even in this world, to say nothing of the next, where we shall neither buy nor sell. Cheer up, and believe me, as of old,



A LETTER OF SYMPATHY.

Your friend,

J. C. STREET.

Business Letters

Storekeeper to Merchant.

MALONE, N. Y., Nov. 14, 189–.

Messrs. GOODHUE & Co., New York, N. Y.

DEAR SIRS: Will you please furnish me by return mail with your list of prices for Rubber Shoes, Arctics, etc. Please quote lowest rates and best terms. Refer to Messrs. Barnaby Bros. and Messrs. Wheeler & Clarke, both of your city.

Yours respectfully,

JOSEPH BATEMAN.

Merchant to Storekeeper.

NEW YORK, Nov. 16, 189–.

Mr. JOSEPH BATEMAN, Malone, N. Y.

DEAR SIR: Herewith we hand you complete list of Rubber Goods, which, being of our own manufacture, we can guarantee to be of the best quality. We have marked down the prices so low we cannot offer better terms than cash with order or on delivery.

Awaiting your early favors, we are,

Yours respectfully,

GOODHUE & Co.

Dealer Ordering Goods.

CLEVELAND, O., April 8, 189–.

Messrs. WARD BROS. & Co., Philadelphia.

DEAR SIRS: Please send me by Merchants' Dispatch:

1,000 "Favoritas" half-boxes . . . @ $46.
1,000 "Hard Times" do. . . . @ 29.
500 "Chicos" boxes . . . . . @ 58.

Be careful not to send any light shades of "Favoritas," as I have got nearly all the light boxes of former lot still on hand, there being little demand for cigars of that color.

I enclose draft on New York for $142 in settlement of my account to March 1st, the receipt of which please acknowledge.

Yours respectfully,

PHILIP MARSH.

Inquiry Into Responsibility.

ST. LOUIS, Sept. 13, 189–.

Messrs. WILLIAMS BROS., Little Rock, Ark.

GENTLEMEN: You will oblige us by stating if Mr. Francis Spellman, of the firm of Spellman & Co., of Hot Springs, Ark., is known to you, and worthy of credit.

We are, very truly yours,

BURT, HENRY & Co.

Answer to Foregoing.

LITTLE ROCK, Ark., Sept. 15, 189–.

Messrs. BURT, HENRY & Co., St. Louis, Mo.

GENTLEMEN: Yours of the 13th inst., received, and we are pleased to report Mr. Spellman an old acquaintance, and entirely worthy of any trust you may place in him.

We are, very truly yours,

WILLIAMS BROS.

Requesting Settlement.

PORTLAND, ME., July 10, 189–.

A. A. KNIGHT, ESQ., Bangor, Me.

DEAR SIR: We have, for several days past, been looking for a remittance from you, covering your April account, and as the necessity of meeting our own engagements punctually is ever before us, we are obliged to remind you that prompt payments are requisite and indispensable to the credit system.

We are, yours, etc.,

T. TAYLOR & Co.

Apologizing for Delay.

BANGOR, ME., July 15, 189–.

Messrs. T. TAYLOR & Co., Portland, Me.

DEAR SIR: I regret extremely my delay in meeting promptly the payment of April bills, and can only excuse myself upon the ground of business depression, and consequent difficulty in making collections.

I herewith enclose, in part payment of account named, bank draft on your city for one hundred dollars ($100), which please pass to my credit. The balance I shall try to remit on the 25th inst.

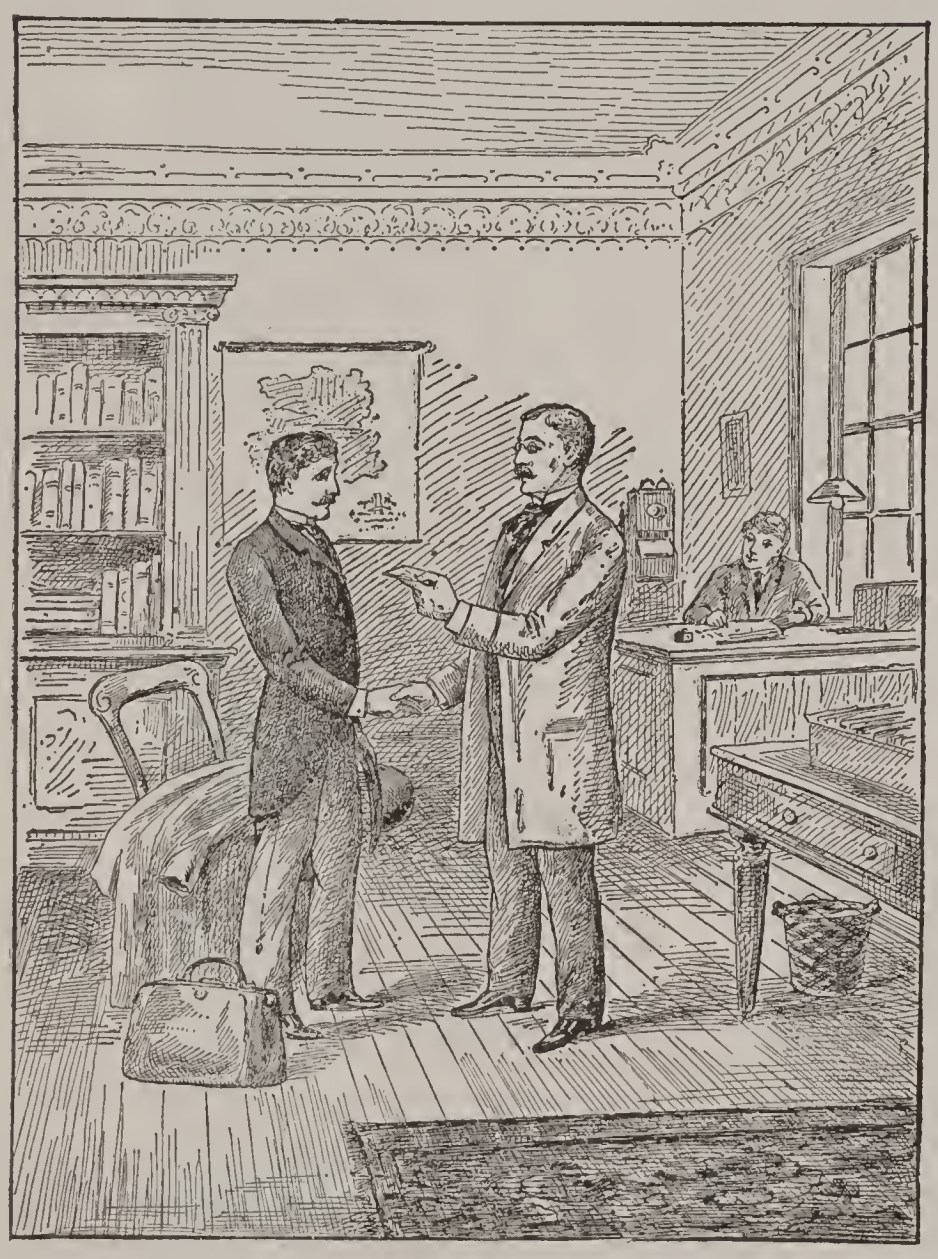
I remain, yours, etc.,
A. A. KNIGHT.

Letter Noticing Error in Invoice.

MORRISTOWN, N. J., Mar. 20, 189–.

Messrs. PITKIN & PHELPS, New York.

GENTLEMEN: We call your attention to an error in the extension of items in your last invoice, by



A LETTER OF RECOMMENDATION.

which we are charged $113.50 more than the invoice actually amounts to. Please correct same, and oblige,

Yours very truly,
CASE, CLARK & CO.

Answer to Foregoing.

Messrs. CASE, CLARK & CO., Morristown, N. J.

GENTLEMEN: We find the amount charged in your *account* correct, and believe the error must have occurred in taking off items from Invoice Book. Enclosed we hand you a correct invoice, and beg your indulgence for any seeming negligence.

We are, yours, etc.,
PITKIN & PHELPS.

Requesting Letter of Introduction.

UTICA, N. Y., Jan. 15, 189–.

Mr. GEORGE VALE.

DEAR SIR: Some time ago you were kind enough to express yourself desirous of serving me in the way of introduction.

Would it be asking too great a favor if I were to solicit from you a letter to two or three of the most respectable builders in New York, whom I should like to wait upon?

I should esteem it a very great favor if you would oblige me, as I am convinced the position you hold among them would considerably enhance my chance of obtaining orders.

Apologizing for troubling you, I remain,
Yours very respectfully,
E. F. WYANT.

Soliciting Consignments.

25 NEW STREET, NEW YORK, Oct. 1, 189–.

L. T. WARREN, Esq., St. Joseph, Mich.

DEAR SIR: Mr. Franklin handed us your letter of the 25th ult., in which you asked the market report on apples, also expenses attending them, to which we reply: Greenings are offered at from $2.25 to $2.50 a bbl., hand picked and carefully packed. Our commission is five (5) per cent. on sales. The usual charges of carting from boat or cars to store, and labor hire in store, amounting to about six cents per barrel, are additional.

We should be pleased to hear from you further, and will try to make satisfactory sales should you entrust us with your shipments.

We are, yours respectfully,
JOHNSON, SWIFT & CO.

Application for Position.

West 42d St.,
NEW YORK, March 30, 189–.

Messrs. STEWART & Co., No. — Broadway.

GENTLEMEN: In reply to your advertisement in to-day's *Herald* for a clerk competent to take charge of a set of books, and conversant with the forms of mercantile correspondence, I beg to offer my services to your Firm.

I have been in the employ of Mr. A. G. Belmont for the past five years, but about three months ago he informed me of his desire to take his son into his counting-house, and dispense with the services of one clerk.

He permits me to refer to him for any testimonial of character or ability which you may require.

Should you favor my application, believe me that

it will be my constant endeavor to fulfil faithfully and punctually the duties required.

I have, gentlemen, the honor to be,

Yours very respectfully,

THOMAS MORRIS.

Testimonial Accompanying the Above.

NEW YORK, January 1, 189–.

Mr. Thomas Morris being about to leave my employ, it gives me great pleasure to testify to his ability as a book-keeper. He has been in my counting-house for three years, during which time he has always maintained the character of a conscientious, upright and faithful clerk. He is a fine penman, corrrect accountant, good correspondent, and of steady moral habits.

It will afford me pleasure at any time to reply to any application with regard to Mr. Morris, and he leaves me with my best wishes for his future success.

A. G. BELMONT.

Circular Letter.

TO OUR PATRONS AND FRIENDS :

We cordially and specially invite the attention of our patrons and friends to our new display of (*here state the new specialties*). We have met with such gracious encouragement, during the past season, and our efforts to meet the public demaud have received such liberal support, we feel doubly assured our present stock will prove equally as inviting, and fully as desirable an exhibit as any we have heretofore made.

Signature,
Address.

Form of an Order to Clothiers.

DAYTON, O., Nov. 10, 189–.

Messrs. PARSONS & Co., 950 Broadway, N. Y.

GENTLEMEN : Please send me by express, C. O. D., one all-wool suit for boy ten years of age, to cost about eight or ten dollars. Also an overcoat to cost about eight dollars. Please enclose rules for self-measurement with parcel, and oblige,

Yours respectfully,

PEETE ROGERS.

Form of Printed Blank to Accompany Invoice.

NEW YORK.....18...

M.....

Enclosed please find invoice of..... amounting to $....., forwarded by..... bill of lading herewith, as per your order of .....

The goods leave us in good condition, and we trust will prove satisfactory. Should anything, however, prove objectionable, we shall feel obliged if you will notify us promptly.

Yours very respectfully,

.....

Form of Account Sales.

New York, Oct. 13, 189—.

Sold by HOLT & CURTIS, *for Account*
E. P. BARLOW, Nashville, Tenn.

300 Barrels Apples, Greenings @ $2.75....		$825 00
PAID.		
Freight Penna. R.R.....	$75 00	
Cartage to store a nd labor.....	18 00	
Commission, 5 per cent.....	41 25	
		134 25
Net proceeds to your credit.....		$690 75

Excusing Payment of Rent.

265 FILBERT STREET, Jan. 21, 189–.

DEAR SIR :

From most unexpected and distressing circumstances, of which perhaps you may, by report, have become acquainted before this, I regret that I have been unable to pay my rent for the past three months. But as up to this time the payment has always been punctually made, I hope I may request your kind forbearance a short time longer. Trusting that you will accede to my request,

I am, yours respectfully,

WILLIAM C. CLARK.

TO EUGENE ADAMS, ESQ.

Demand for Payment.

BOSTON, July 15, 189–.

Mr. F. C. GILBERT, Springfield.

SIR : Feeling much disappointed by your failure to settle my account according to promise, I am compelled to say that the profits on my business will not admit of longer credit. At the same time, I should be sorry to inconvenience you, and will therefore fix the 27th inst. for payment, after which it will be quite impossible for me to wait, however unpleasant the alternative. I am, sir,

Yours obediently,

A. B. JORDAN.

Reply to Above.

SPRINGFIELD, July 20, 189–.

Mr. A. B. JORDAN, Boston.

DEAR SIR : I am happy to be able to enclose you a check on Messrs. Rice & Co., of your city, for the sum for which I have already been too long your

debtor. Assuring you that unforseen disappointments have been the sole cause of any want of punctuality, I remain, dear sir,

Yours very truly,
F. C. GILBERT.

Notice of Draft.

PHILADELPHIA, Jan. 16, 189–.

Messrs. NELSON & Co., Lancaster, Pa.

GENTLEMEN: We have this day deposited in bank for collection three days sight draft on you for one thousand dollars ($1,000), which please honor and oblige,

Yours truly,
HIGGINSON & ELY.

Order to a Grocer.

SCOTCH PLAINS, N. J., May 1. 189–.

Messrs. ARNOLD & VAN NOSTRAND, Plainfield, N. J.,

DEAR SIRS: Please deliver to the bearer, with bill of cost, the following:

28 lbs. Granulated Sugar,
3 lbs. English Breakfast Tea,
5 lbs. Java Coffee, roasted, not ground,
2 lbs. Mocha, " "
1 box Taylor's Family Soap,
5 gal. N. O. Molasses,
1 bbl. Flour (XXX).

Charge in account, and oblige,

Yours, etc.,
JAMES T. MILLER.

Order to a Dry Goods Merchant.

JOLIET, Ill., March 2, 189–.

Messrs. FIELD, LEITER & Co., Chicago, Ill.,

GENTLEMEN: Please send me by American Express the following:

15 yards ginghams, Renfrew Madras styles, @ 15	$2.25
13 yards Glasgow checks, dress styles, @ 12	1.56
5 doz. napkins, @ $3.50	17.50
½ doz. ladies' hemstitched handkerchiefs, @ $3.50	1.75
3 pair ladies' fine hose, @ $1.50	4.50
	$27.56

I inclose P. O. order for five ($5) dollars. Please C. O. D. balance.

Yours truly,
MRS. MARIA C. CLAYTON,
35 Lake Avenue.

Consignees Acknowledge Receipt of Invoices, &c.

NEW YORK, Dec. 29, 189–.

Messrs. JONES, LOYD & Co., 47 Cornhill, London, England.

GENTLEMEN: We beg to acknowledge receipt of your esteemed favor of 18th inst. enclosing Invoice and Bill of Lading of Fifteen Bales of Australian Wool, to arrive per "Neptune," Smith, Master. We thank you for the honor conferred upon us, and assure you that we will use our best endeavors to merit a continuance of the confidence you have been pleased to place in us.

Hoping for a safe and quick passage for the good ship "Neptune," we are,

Yours very respectfully,
PARKER BROS.

Bill of Lading and Invoice.

SAVANNAH, March 21, 189–.

Mr. SAMUEL BARLOW, London.

SIR: Enclosed please find invoice and bill of lading of cotton shipped to you per the "Otranto," the former amounts to $685.80 for which sum please remit us dft. on New York at 60 days.

Awaiting the pleasure of your further commands,

We remain, yours faithfully,
HARDING & PIERCE.

New Partner Admitted.

CHICAGO, Jan. 1, 189–.

Mr. ROBERT HALL.

DEAR SIR: I beg to acquaint you, that in consequence of my having taken into partnership my nephew, Charles Martin, the business of my establishment will henceforward be conducted under the firm of Henry Martin and Nephew. Please to note our respective signatures at foot.

Returning you my sincere acknowledgments for the proofs of confidence with which you have favored me during so many years, and which I trust will be continued to our new Firm, I remain,

Very respectfully yours,
HENRY MARTIN.

HENRY MARTIN will sign,
Henry Martin & Nephew.

CHARLES MARTIN will sign,
HENRY MARTIN & NEPHEW.

Merchants' Apology for not Shipping as Ordered.

NEW YORK, April 15, 189–.

Mr. PHILIP MARSH, Cleveland, O.

DEAR SIR: We are sorry to learn by your favor of 13th inst. that we made a mistake in the mode of shipment of your goods on the 10th inst. On referring to your order, we find that you are entirely correct, and we will give you credit on your account for the $2.25 excess of freight paid by you. We certainly will be more careful hereafter, and beg to apologize for our blunder.

Yours respectfully,
WARD BROS. & Co.


Healthful Exercise

Sports and Pastimes

WORK calls for play. Is it a duty to work? No less is it a duty to play, to take recreation, to unbend the bow, to turn our physical powers out to pasture, to send them to the gymnasium or the playground. Now for a grand romp, a splendid game, a cordial hand-shake with fresh air! Come on, ye pale dyspeptics, sallow students, thin clerks, withered business men, lank girls and women! Let exercise stir your blood and paint your cheeks!

No violent exertions are necessary, no difficult feats need be attempted, no special form of exercise need occupy much of the time and attention; but each day a well-directed plan is to be followed, by which the weak and untrustworthy parts of the body are to be found out, and then steadily improved by exercise, until finally the body becomes like the "one-hoss shay" in Doctor Holmes' ingenious parable:

In building of chaises, I tell you what,
There is always *somewhere* a weakest spot,
In hub, tire, felloe, in spring or thill,
In panel or cross-bar, or floor or sill,
In screw, bolt, thoroughbrace—lurking still,
Find it somewhere you must and will—
Above or below, or within or without—
And that's the reason, beyond a doubt,
A chaise *breaks down* but doesn't wear out.

What is true of chaises is true of animals, man included. What the worthy deacon did for his new "shay" we can do for our bodies, or come near to it. Said the Deacon:

'Tis mighty plain
That the weakes' place mus' stan' the strain;
'n' the way t' fix it, as I maintain,
Is only jest
T' make that place as strong as the rest.

This is what we have to do with the vehicle in which we travel the road of life, if we would avoid premature collapse.

It is by no means necessary, as many imagine, to give much time daily to exercise in order to acquire a strong and hearty body. On the contrary, many who, dissatisfied with the condition of their health and strength, have begun to take more exercise than before, have defeated their purpose by taking too much exercise.

To exhaust the frame by long walks and rides, or by undertaking some difficult and arduous system of training, would be unwise,

even if the sole object were to acquire strength ; but where the ultimate object is to increase the capacity for the work of life (as it must be with every man of sense), and this work is only indirectly dependent on bodily strength, it is utter folly to exhaust the frame by efforts for which it is unfit.

Let it be noticed, then, that apart from such exercise as falls naturally into the day's work, an hour a day, or even four times a week, devoted to systematic exercise, will suffice, first to restore, and afterward to maintain, the strength of the body. It was with this small amount of daily training that Maclaren obtained such remarkable results, adding girth to the chest and limbs, increasing the weight and muscular development, changing actually the shape of the bony framework of the body—in grown men—not in long periods of time, but in a few weeks.

LAWN TENNIS



AWN TENNIS is an adaptation of the grand old game of tennis to out-door courts, which may be made wherever there is a sufficient expanse either of turf or of smooth ground. It is said to have been invented long ago ; but it is only quite within late years that it has become a favorite game throughout the country. It may be hoped, however, that it will long continue to enjoy its well-earned popularity, for it combines much of the interest and attractions of real tennis, with this immense advantage, that it can be played in the open air.

For schoolboys it is rather to be called a holiday amusement than a school game. Where there are plenty of players available, cricket, foot ball or base ball is a much more commendable, as well as, generally speaking, a more convenient game ; but in holiday time comrades are not so easily to be found in abundance, and then the charms of a game that can be played by four, or even a smaller number, are soon appreciated.

There is, moreover, this special recommendation of lawn tennis, that it can be played by girls as well as boys, and that ladies are not unfrequently known to be able to hold their own in a double game, or even in a single game, against really excellent players belonging to the stronger sex.

The Court.

The Court is 78 feet long, and 27 feet wide. It is divided across the middle by a net, the ends of which are attached to two posts, A and B, standing 3 feet outside of the court on either side. The height of the net is 3 feet 6 inches at the posts, and 3 feet at the middle. At each end of the court, parallel with the net, and 39 feet from it, are drawn the base lines DE and FG, the ends of which are connected by the side lines

DF and EG. Half way between side lines, and parallel with them, is drawn the half-court line I H, forming the right and left courts. On each side of the net, 21 feet from it, and parallel with it, are drawn the service lines KL and MN.

For average usefulness the dirt court, requiring much the least care, is best. Such a court is also easily made. Take any ordinary piece of land (50 feet by 100 feet) and bring it to a level, removing all stones and roots; continued rolling and sprinkling will then produce a smooth, hard surface.

Turf, to be kept hard and firm, requires much rolling; the grass of the court must be of the best quality, and must be carefully cut and weeded; the worn spots must be worked over and re-seeded, and frequent brush-harrowings and re-markings are necessary. A turf court also requires periodical rests of several days, if in anything like constant use.

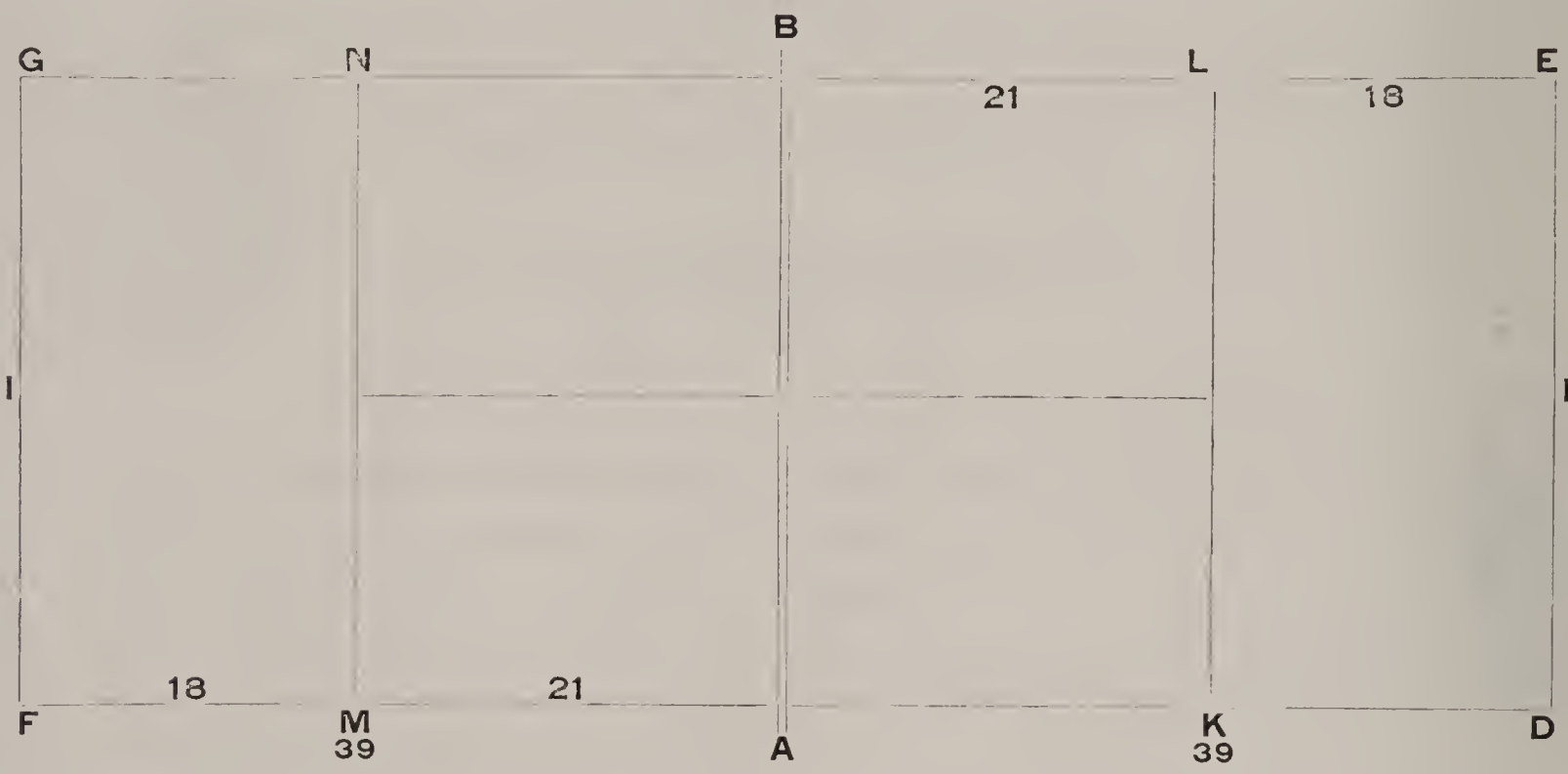
Cement courts are only useful in clubs or in countries where the soil is unfit for other kinds of court.

In the construction of a court great stress is to be put upon the following points, too often neglected:

1. Sufficient space *about* the court. At least 21 feet at the ends and 12 feet at the sides should be left clear.

2. The ground must be hard, *perfectly* level and smooth. To effect a proper drainage the court is too often allowed a slight slant; except in the hard court, however, drainage may be better attained by a good sub-soil. For turf, a foundation of about a foot of cinders or gravel answers very well; above this six inches of soil and then the turf. A similar sub-soil also greatly improves a dirt court.

3. If possible, the court should lie north and south, unshaded by trees, to insure equality of light. Also, the player will be greatly aided in following the ball if there can be a dark background, such as would be given by thick shrubbery or even a wall.



The most durable centre net, and the one most in favor with experts, is a black tarred one with top binding of white canvas, easily distinguishable, even in very rapid play. It is held in place by the posts and centre-iron. A very serviceable post is made of pine, four inches square, buried two and a half feet in the ground, three feet six inches high, having a groove along the top and a cleat upon the outer side.

Concerning centre-irons, there is little

choice. All are likely to interfere with the play, but the net must be kept just three feet high at the centre.

The backstops—an arrangement without the court to intercept balls, saving the player the trouble of going for them—are best made of wire netting, at least 7 feet high and 50 feet to 75 feet long, placed 21 feet behind the base line.

The choice of a good racket is a test of judgment, of critical observation and knowledge of the proper kind, even to the expert. It is generally a matter of luck with the inexperienced player.

It is essential that the gut should be good (chain not too thick), the handle plain and octagonal, the splice well fitting and the hoop free from knots, with the grain going all around. The stringing should be so tight as to emit a distinct musical note when struck with the fingers. If too tight, however, it will be of little use for "driving."



OUTDOOR SPORTS.

To test the balance—an important quality—hold the racket loosely by the butt, and jerk or swing it up and down; if it comes up with difficulty the head is too heavy, if too easily it is too light.

For men the weight varies from 14 ounces to 14½ ounces; for women 13½ ounces is common among the best players.

Never use any but good balls; for tournament practice, of course, only the official regulation ball. Both rackets and balls should be kept in a dry, moderate temperature; the tendency of rackets to warp may be counteracted by use of a racket press or weight that will hold them flat.

The manner of holding a racket is largely a matter of personal experiment. The main point at issue is the advisability of changing the hold of the racket during play.

Lay the racket on a table with the smooth side up. Open the hand, with the thumb nearly at right angles to the fingers, and then clasp the handle in such a way as to make its upper right edge (if it were square) fit into the hollow of the joint between the thumb and forefinger. In closing the fingers on the handle do not put them directly round it, but with the first joint of each finger slanting up the handle, which will cause the top joints to slant down the other way. The first two fingers should be a little separated from the other fingers and each other. The end of the handle should be well within the hand, with the little finger round the leather rim. The thumb should not go round onto the ends of the fingers, but should slope upwards across the upper side of the handle.



THE SOCIAL PART OF THE GAME.

The position half way between the net and service line is agreed by most of our best players to be the vantage ground of the court from which they must easily protect themselves and attack their opponents. It then is the point to be gained and held.

In serving stand as near to the centre of the base line as possible, it is better than the side or defense, and gives a wider range for placing. Do not serve too swiftly to place well, and *never* make a double fault. Wait until you have your opponent at disadvantage to take the net position.

Unless you know beforehand the peculiarity of an opponent's service, stand a foot or two behind the base line to receive it (it is easier to run forward than backward), and do not try to protect your back-hand corner by giving your right hand more ground to cover.

The most general return is down the side line, the ball striking near the base line, and this may be varied by a drive across court, a difficult stroke, which, to be effected, should strike within the service line.

There should be a referee for every tournament, whose name shall be stated in the circular announcing such tournament. He shall have general charge of the matches, under the instructions and advice of the managing committee, with such power and authority as may be given him by the rules and by said committee. He shall notify the committee in case he intends to leave the grounds during the matches, and the committee shall appoint a substitute to act, with like powers, during his absence.

There shall be an umpire for each match, and as many linesmen as the players desire.



BACKHAND STROKE.

The umpire may act as linesman also. The umpire shall have general charge of the match, and shall decide whether the player took the ball on the first or second bounce. The umpire shall also decide any question of interpretation or construction of the rules that may arise. The decision of the umpire upon any question of fact, or where a discretion is allowed to him under the rules, shall be final.

FOOT BALL

THE largest crowds ever assembled to witness any athletic contests are those which always gather upon the annual recurrence of the foot-ball contests between the different colleges. As many as 30,000 persons have witnessed some of the games between the young collegians who represent the brawn and muscle of their respective institutions. The game appears to have taken a firm hold upon the public, and nearly every institution of learning has its team, while many local and independent clubs are in existence in every part of the country.

Those who are taking up the sport for the first time should observe certain rules which will enable them to become adept players with less mistakes than perhaps would otherwise fall to their lot.

A beginner in foot ball should do two things. He should read the rules and he should, if possible, watch the practice. If the latter be impossible, he and his mates must, after having read the rules, start in and, with eleven men on a side, play according to their own interpretation of these rules. When differences of opinion arise as to the meaning of any rule, a letter addressed to some one of the players upon prominent teams will almost always elicit a ready and satisfactory answer.

The first thing to be done in starting the practice, is to provide regarding the accessories of the game, which in foot ball are of the simplest kind. The field should be marked out with ordinary lime-lines, enclosing a space of 330 feet long and 160 feet wide.

Description of the Grounds.

While not absolutely necessary, it is customary to mark the field also with transverse lines every five yards, for the benefit of the referee in determining how far the ball is advanced at every down. In the middle of the lines forming the ends of the field, the goal-posts are erected, and should be eighteen feet six inches apart, with cross-bar ten feet from the ground. The posts should project several feet above the cross-bar. The ball used is an oval leather cover containing a rubber inner, which is inflated by means of a small air pump or the lungs.

The costumes of the players form another very important feature, and should be of a proper and serviceable nature.

The ordinary player should wear a canvas jacket. This can be home-made or pur-



THE TURNING POINT IN THE GAME

chased at a small expense from any athletic outfitter. It should fit closely, but not too tightly, and lace up in front so that it may be drawn quite snugly. Some have elastic pieces set in at the sides, back or arms, but these additions are by no means necessary.

The trousers should be of some stout material, fustian for example, and well padded. This padding can be done by any seamstress; quilting in soft material over knees and thighs, or the regular athletic outfitters furnish trousers provided with the padding. Long woolen stockings are worn, and not infrequently, shin guards, by men playing in the forward line.

The most important feature of the entire uniform is the shoe. This may be the ordinary canvas and leather base ball shoe with leather cross-pieces nailed across the sole to prevent slipping. This is the most inexpensive form, but the best shoes are made entirely of leather, kangaroo skin preferably, fitting the foot firmly, yet comfortably, lacing well up on the ankle, and the soles provided with a small leather spike which can be renewed when worn down. Inside this shoe and either attached to the bottom of it, or not, as preferred, a thin leather anklet laces tightly over the foot, and is an almost sure preventive of sprained ankles.

The cap may be of almost any variety, and except in the cases of half-backs and back, does not play any very important part. These men should, however, have caps with visors to protect their eyes from the sun when catching a long kick.

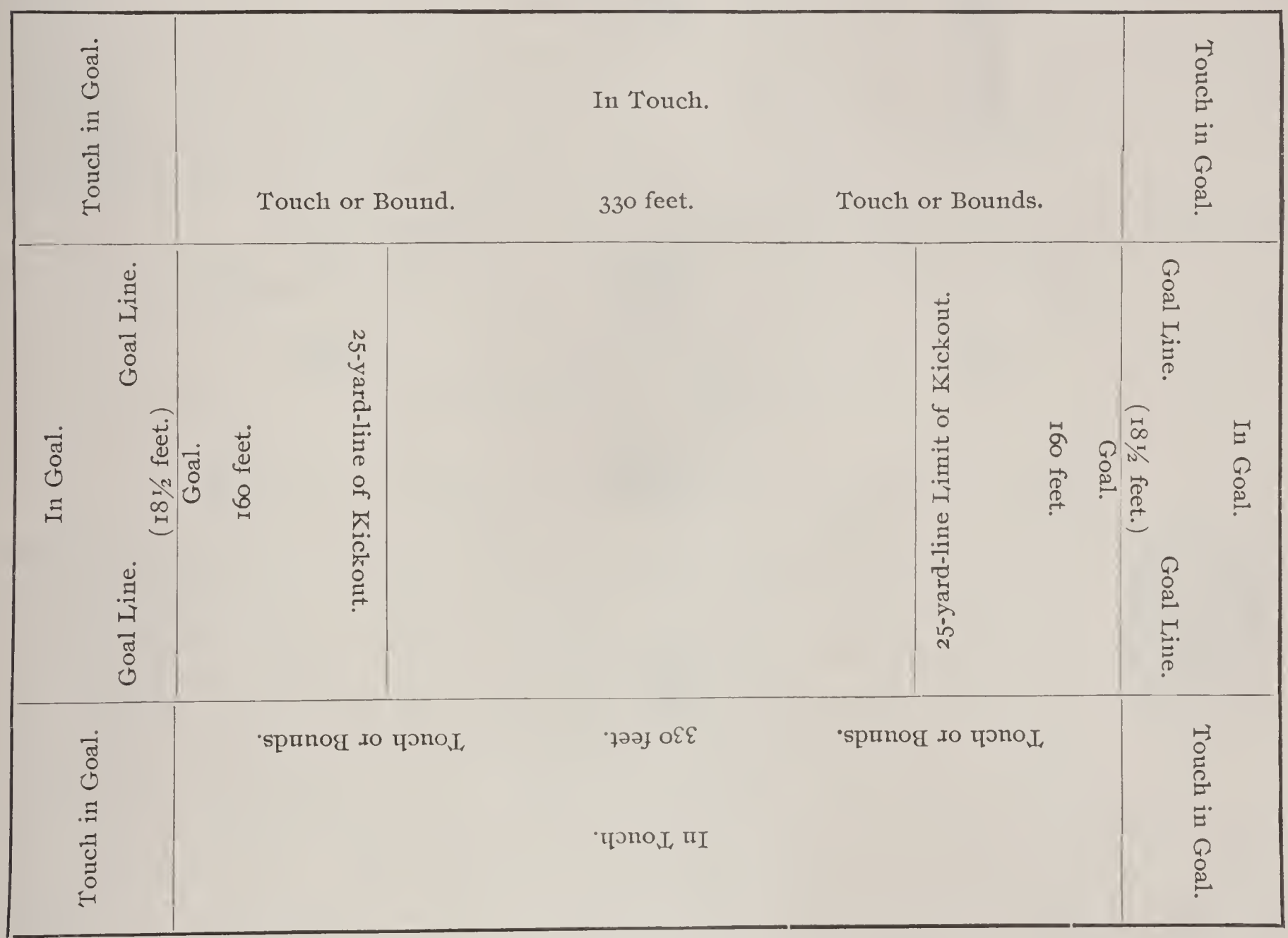


DIAGRAM OF FOOT BALL GROUNDS.

The team of eleven men is usually divided into seven rushers or forwards, who stand in a line facing ther seven opponents ; a quarter-back, who stands just behind this line ; two half-backs, a few yards behind the quarter-back ; and finally, a full-back or goal tend, who stands a dozen yards or so behind the half-backs. This gives the general formation, but is, of course, dependent upon the plays to be executed.



DROP KICK.

The succession of plays continues for thirty-five minutes in a regular match. Then intervenes a ten-minute intermission, after which the side which did not have the kick-off at the commencement of the match has possession of the ball for the kick-off at the second thirty-five minutes.

BASE BALL

OUR national game is base ball. What cricket is to England, this game is to our country. Since it came into vogue its popularity, instead of diminishing, has increased, and in all our large cities the professional teams have had an enthusiastic following. Immense audiences not infrequently assemble, composed of all classes of people, applauding the fine points in the game, and execrating the blunders made by some luck less player.

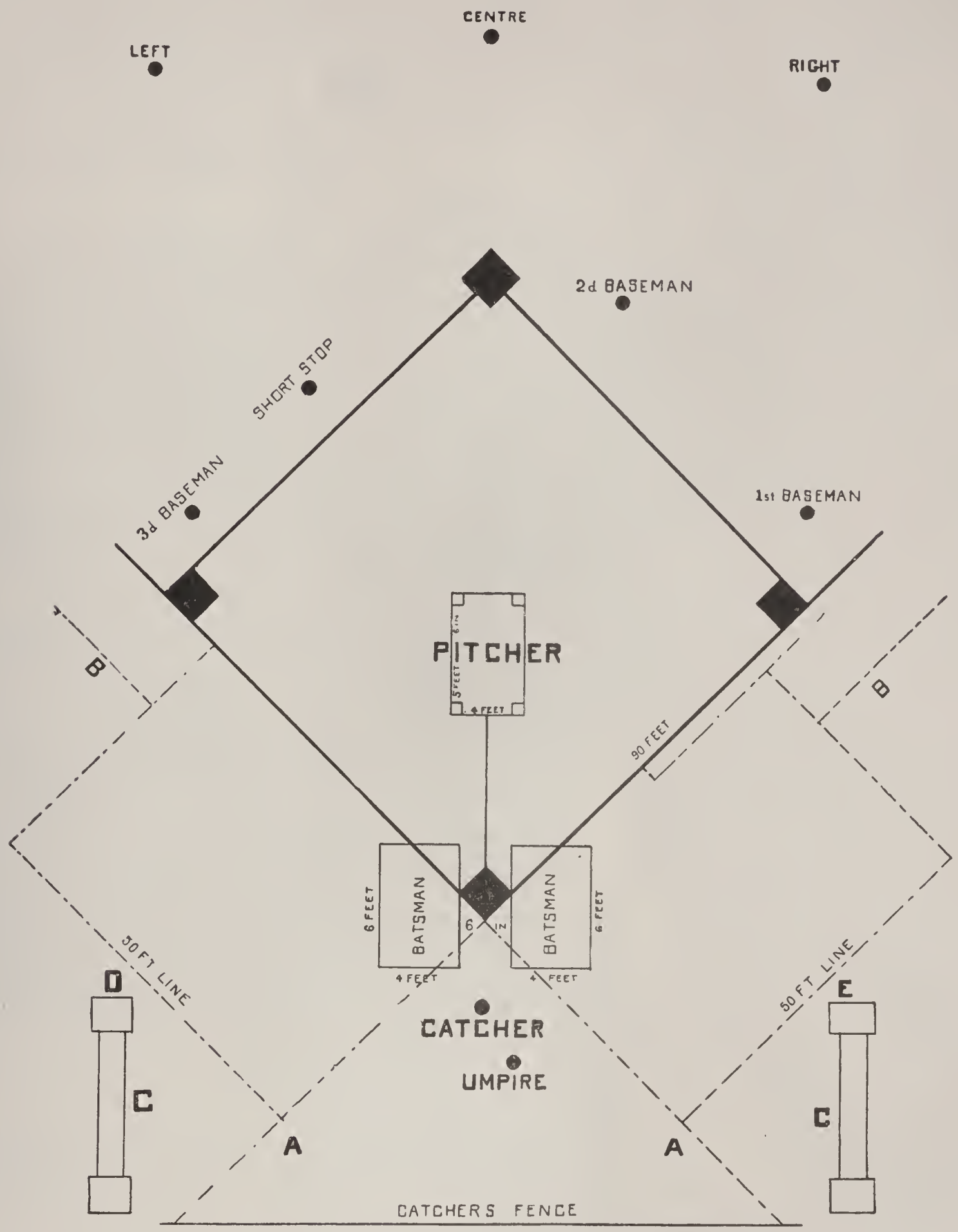
Every school, every village, every hamlet is more or less devoted to this sport. Boys but just promoted to long pants, as well as full-grown men, can engage in it. The rules are simple, the game is easily learned, the exercise is healthful, the spirit of rivalry is exhilarating, and it may be prophesied that the day is far distant when base ball will cease to be a national institution, holding front rank in athletics and outdoor sports.

To enter upon a contest for the palm of superiority in this American game, and to display the skill in pitching, batting, and fielding which base ball requires, needs men of pluck, nerve, and presence of mind—courageous and intelligent fellows, who have their wits about them ; for the game, when played up to its highest mark is anything but a boys' game in any respect, as the amount of fatigue involved, and the injuries frequently sustained, fully prove.

Nevertheless, base ball can be played and enjoyed by boys as well as men, for its theory is simple, and when played by amateurs the demand for those qualifications which make a player excel in professional contests is of course not so great.

The theory of base ball in brief is as follows :—A space of ground being marked

out on a level field in the form of a diamond, with equal sides, bases are placed on the four corners thereof. The contestants include nine players on each side—one side takes the field and the other goes to the bat. When the field side take their positions the pitcher delivers the ball to the batsman, who endeavors to send it out of the reach of the fielders, and far enough out on the field to enable him to run round the bases, and if



CORRECT DIAGRAM OF A BASE BALL GROUND.

A. A. A.—Ground reserved for Umpire, Batsman and Catcher.
B. B.—Ground reserved for Captain and Assistant.
C.—Players' Bench. D.—Visiting Players' Bat Rack.
R.—Home Players' Bat Rack.

he reaches the home base—his starting-point—without being put out, he scores a run. He is followed in rotation by the others of his side until three of the batting party are put out, when the field side come in and take their turn at the bat. This goes on until nine innings have been played to a close, and then the side scoring the most runs wins the game.

It will be readily seen that the theory of the game is simple enough, and it is this simplicity of construction which forms one of its chief attractions for the masses; and yet to excel in the game as a noted expert requires not only the possession of the physical attributes of endurance, agility, strength, good throwing and running powers, together with plenty of courage, pluck, and nerve, but also the mental powers of sound judgment, quick perception, thorough control of temper, and the presence of mind to act promptly in critical emergencies.

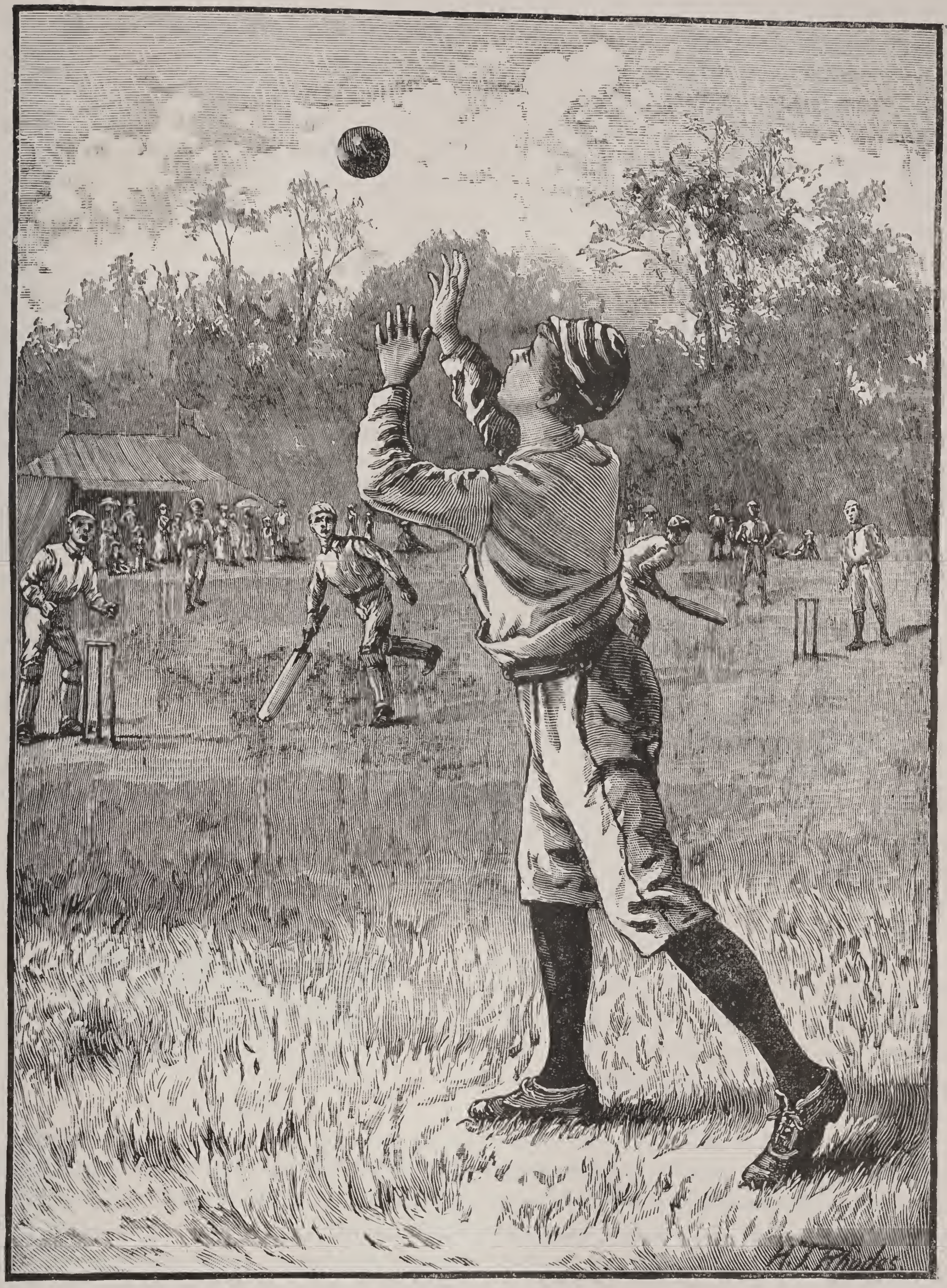


CRICKET



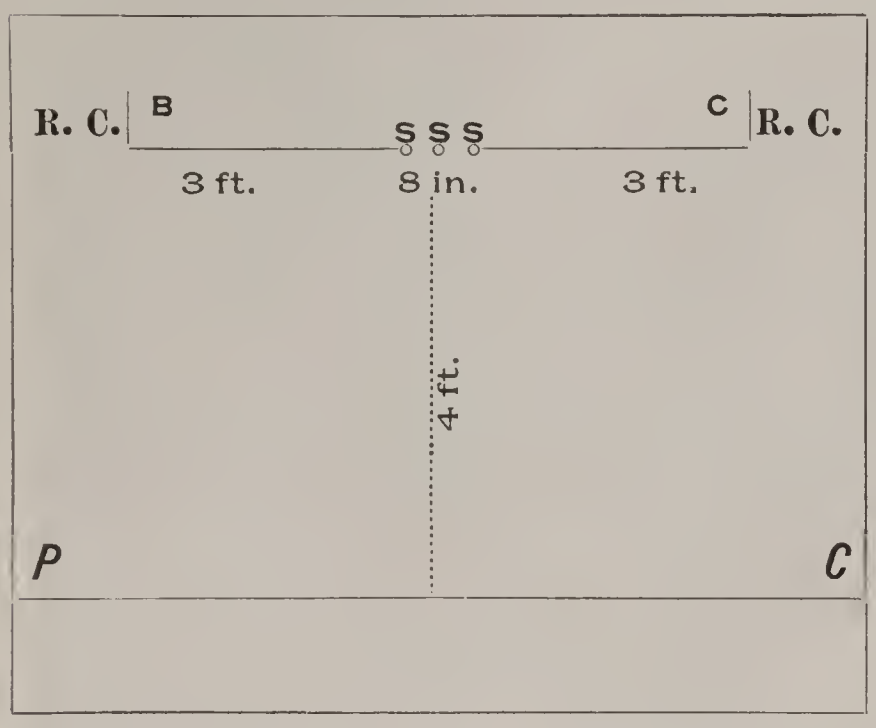
CRICKET is an English game. It is fast coming to be an American game. Many persons consider that it has advantages over foot ball and base ball. The progress of the game is slower than that of either of the games just mentioned, and for this reason is not so well suited to our American tastes. That cricket requires skill, strength, patience, the mental processes of sound judgment and quick decision, will be disputed by no one. It is also a most healthful outdoor exercise. The expert cricket player must have all his physical powers in full command and must be in the pink of condition.

The wickets are now formed of three upright stumps, made usually of ash of the best growth. Across these are two "bails," or pieces of wood neatly carved and turned, and made of almost similar material, each one of which connects two of the three stumps, the grooves on the top of each of the stumps serving to secure the ends of each bail. These are what is termed collectively a "wicket," and at each end of the ground, at a distance of twenty-two yards, three stumps are placed, the two erections serving to illustrate the distinction of "double wicket."



A CRITICAL MOMENT.

In preparing for a match, the ground at each wicket must be laid out according to the annexed diagram. The "bowling crease" is meant to be a sort of check upon the bowler to prevent him from running past the stumps. Should he in delivering a ball place both feet on the outside of the bowling



THE WICKET.

S. S. S. Stumps. | R. C. Return Crease.
B. C. Bowling Crease. | P. C. Popping Crease.

crease (that is, in front of the stumps), the ball so delivered is called a "no-ball." The "return crease" is intended to indicate the limit sidewise of the bowler's range. As for the "popping crease," it may be described as a kind of check upon the batsman, for should he not have one foot always within or on the crease the wicket-keeper may put down the wicket with the ball, and so "stump" the batsman. Accordingly, the striker should be very careful never to go out of his ground.

Before facing the bowler, the batsman commonly "takes block" from the umpire. "Block" is a spot usually a bat's length from the middle stump, with which it is supposed to be exactly in a line, for the purpose of covering the wicket from the bowler's attack.

The old bat was curved in the form of a butter-knife, and was obviously of little use except for the purpose of hitting—blocking or scientific play being things at that time not dreamt of in the philosophy of a cricketer. The bowling was what is known as underhand, and the mysteries of roundhand, of curves, spins and the other secrets of attack now so skilfully employed, were utterly unknown, so that the great point of the game was to hit without thought of defence. And hit they did with a vengeance, if we can believe some of the traditions of our forefathers.

To complete the equipment of a cricket club, it will be necessary to provide a telegraph stand for announcing the scores, etc., and a set of nets for use in practice. A cricket club should always have one of the latter. You cannot always get together a sufficient number of players every practice. By using nets, however, practice can nearly always be had, as it is not then so requisite to have several players. If you have a net with sides you will find yourself still further assisted, as most of the hits will thus be stopped, and no long-stop will be required,



NET PRACTICE.

and one bowler and two fieldsmen will enable you to have a good practice. If you determine to have a complete outfit, get the different articles of good stuff and of good makers. An unwise economy is an expensive luxury in the end.

You will find yourself much disappointed if you labor under any sort of impression that the science of cricket can be mastered except after the expenditure of much time and patience. Do not be mislead by the idea that to be a good cricketer, either as batsman, bowler or fieldsman, is an inborn gift. Take the converse of that hackneyed proverb about a poet, and be assured that a cricketer is made, not born. It is in batting more than in any other branches of the game that you will find practice the great secret to success.

You will ask what is the first point that will have to be mastered before you can enter on the high road to success. The answer is, *Position.* Master this one great



POSITION.

rudiment, and you are on the way to advancement. It is not so easily mastered, though; so take the best advice, and if you can possibly secure a favorable opportunity to watch an expert and well-tried batsman at work, do not fail to take advantage of the chance. If you are lucky enough to see one of the most eminent amateur or professional players at the wicket you will find the benefit that will accrue from such a practical illustration.

Do not lose sight of the first necessity of acquiring a useful as well as proper attitude of batting. As in most things, an evil habit



READY FOR PLAY.

is the most expensive to a good beginner. An easy position is as capable of achievement as an ungraceful, cramped, and crooked attitude, though the bent may be more in the wrong direction.

You must first of all see that you form for yourself a position that will enable you to stand firmly without yielding an inch, while at the same time it affords the greatest facility for rapidity of motion either forwards or backwards. You must not indulge in eccentricities, after the fashion of the dancing bear, or your career will be brief. Above all things keep your right leg as firm as a rock, as this leg essentially forms the "pivot," to regulate the movements of the batsman, and you cannot adapt yourself readily to the

varying necessities of the game if the muscles be relaxed, the knee bent, and the posture generally that of a cat militant.

Be sure that you insist on this stout support for your actions, for the posture of the



THE FORWARD PLAY.

other leg will be of minor importance, or at the best a matter of choice. It is marvellous to see the contortions in which some batsmen indulge, and still more surprising the success that attends some of those who affect the most eccentric attidudes. There are men who stand with their legs separated to the full extreme, after the form of the letter V in an inverted state, and others who give you the idea that they pay rent for the use of the ground, and are determined to occupy the very smallest possible space, so cramped is their attitude.

Place your left foot about twelve inches in front of the right, and see that it is as nearly as possible at right angles with it. You will find that in this position your left eye will be just above the level of the left shoulder; and more than one batsman insists upon this as an absolute essential to the acquirement of a good position. Keep your bat well down, though not so close to the ground as to hinder your quick recovery in case of hitting; for mere defense of the wicket you will soon learn to consider tame and monotonous.

To know precisely when to play forward and when to play backward at a certain style of ball is an achievement in itself; but to decide on the precise course to be pursued, and to act with the requisite amount of resolution, is a feat that will take you some time to accomplish with anything like certainty. There are some batsmen who lunge out at every ball, and trust to their keenness of vision more than to any judgment in calculation to enable them to overthrow the best-laid schemes of a bowler.

To get a batsman into what is called "two minds" is the main aim of a bowler; and it



THE BACKWARD PLAY.

is this very player that renders him the most effectual help. Old Felix, one of the most thoroughly qualified writers who ever discoursed on cricket, speaks feelingly on this point: "Every well-practiced batsman knows



WINTER RECREATION AND PLEASURE

there is a spot of ground—yes, there is a spot of ground—upon which if the ball should alight it produces an indescribable sensation seems to be caused by the difficulty of being able to decide at the instant whether or not you should lunge out to meet it, smother it and kill it, or take it upon the back play. For when once you throw your body forward, in vain (should your judgment be incorrect) will you recover yourself in time enough to overtake the ball."

Defence, and not defiance, should be the motto of the young batsman, until he has proved himself able to take his own part against the attack from first to last with the same amount of confidence. Take care of the stumps, and the runs will take care of themselves. You must feel your way gently at the outset, until you have accus-



THE CUT.

tomed yourself to the style of the bowling to which you are opposed, and until you have begun to understand the plans of the attacking party.

Much depends on the curve or spin that is imparted to the bowling, and your style of play will have to be so suited as to best frustrate the craft of the enemy who aims



THE FORWARD CUT.

at your destruction. The intentional bias given to the ball in its passage from bowler to batsman must cause, at any time, more disquietude than is occasioned when no deflection arises from the course of the ball, as obviously with a spinning ball the batsman has a double risk to his safety, namely, in the pitch as well as in the deviation of the ball. Play steadily at first until you have become used to the pecularities of the bowling.

A left-handed bowler usually may be expected to break, or twist, from the off to a right-handed batsmen, so that a rule may be taken as conclusive on this point, and you will at least have your weapons ready to your hand for this emergency. If you allow the ball to touch the ground, you give it an opportunity of indulging in its revolutions, as it will take a fresh direction the

moment that it reaches the turf. You must "smother" it before you allow it a field for the practice of its vicious purposes, or you must play back, and rob it of much of its



THE LEG CUT.

offensive action by the defensive policy of protecting your wicket with the full width of your bat.

You have still to learn the art of "cutting," as the action of hitting a ball by means of the wrist is usually denominated. You have still to learn one of the most effective hits in the possession of an expert batsman, and you can never hope to attain your diploma of the college of batsmen unless you have to some extent mastered this great necessity. Much of the efficacy of this hit depends obviously on the batsman's strength of wrist, but even with this faculty no great success can be achieved unless the eye be quick and the judgment ready to time the ball well as it rises from the ground.

There are two methods of cutting, known respectively as the "forward cut" and the "late cut," though the latter is the more efficacious as well as the more elegant and likely to confer the greater honor on the rising batsman. The forward cut resembles more the ordinary drive to the off, with a slight infusion of wrist. Take notice that in this hit the relative uses of the two legs are reversed. To realize the cut proper you will have to make your left leg the pivot instead of the right, as is usual in most of the ordinary hits, and the right will have to be used, as occasion requires, to promote the correct timing of the ball. You will have necessarily to follow, as it were, the course of the ball, or rather to face it as you are in the act of hitting.

Much of the secret of cutting consists in the judgment with which the ball is timed, and a few trials will convince you of the correctness of this assertion. If your eye and



THE LEG POKE.

mind act well in concert, you need have little fear of failure, and practice will further enable you to make sure of your aim. It may be that you will never be so proficient

as some who have become almost representative batsmen by reason of this one hit; for to cut brilliantly demands that you should



HITTING THE LEG.

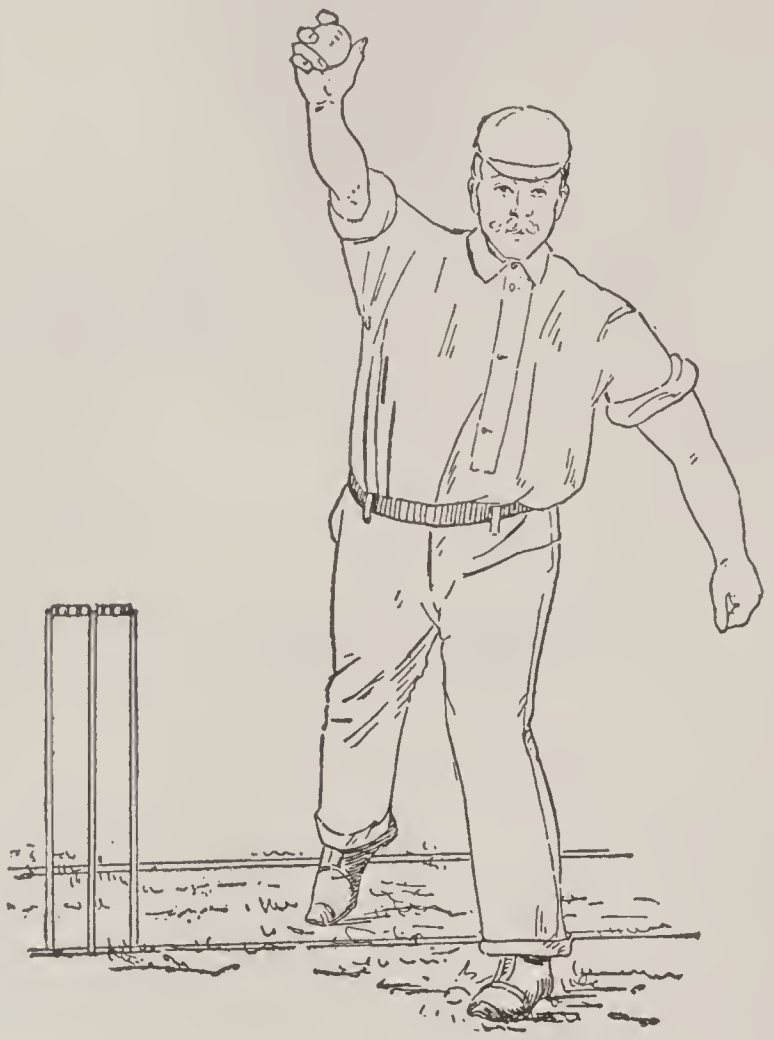
be able to calculate the time and rise of the ball to the veriest nicety; and flexibility of wrist is required rather than the possession



STRAIGHT ARM DELIVERY.

of anything like herculean strength. It is a stroke, none the less, that you should cultivate and endeavor to master, although there are reasons why even the cut should be administered with caution and never abused.

You will find here that a heavy bat will seriously interfere with the success of your efforts, so do not be misled by the idea that an addition of a pound or two avoirdupois will give you any advantage over the rest of your fellows. Some young players seem to think that it adds to their renown to wield a bat more sensible plodding souls reject on utilitarian principles. In cutting you want a bat that you can raise with ease, not one



HIGH ARM DELIVERY.

that will cause the tendons of your wrist to ache for a week afterwards.

If you are under the impression that you have mastered the art of bowling because you have gained a certain amount of mechanical precision in directing the course of the ball, you are very much mistaken. You must banish forever the notion that precision is all that is required to become a great bowler, or you will have wasted much time and labor that might have been more profitably spent. You must recognize at once the fact that to secure eminence as a bowler

needs gifts that all do not possess, as well as a degree of nerve that practice and experience can alone produce. You need patience and resolution, as you well know, to become



CATCHING A HIGH HIT.

a good batsman ; but you require, in addition, a keen perception and a readiness to discover the weak points of your adversaries, or you will never mature into a bowler of the highest rank.

Do not over-bowl yourself at the outset, but try your strength with a low delivery, and a pace that will not tire or fatigue you. You will find at first that you will have some difficulty in pitching the ball far enough, though the distance does not seem very great until you have tried. You had better do anything than retain that fault, for short bowling is the worst of all, and even one long hop in an over is a fatal mistake that you must seek to overcome at all hazards. You will assist your future prospects, too, more than you can imagine, by selecting a neat and easy style of delivery. It may be that you have already formed a habit in this line that you cannot well eradicate, and in this case the advice may come a little too late. It is certain that the more easy and less exhaustive the style of action, the better the chance of a bowler retaining his skill for any length of time. If you have, unfortunately, contracted the habit of bowling spasmodically, without the measured steady swing that should mark the movements of a first-class bowler, you can hardly hope to last, although you may electrify the world perchance for a few brief seasons.

You will have to learn how best to hold the ball, for so much depends on its course after leaving your hand that every possible advantage in the manner of holding has carefully to be studied. It is obvious that most



CATCHING A LONG HIT.

of the rotary tendency which proves so effectual in the case of some bowlers, is owing to the method in which the ball is held when it leaves the hand, so that no

chance should be allowed to escape in this direction. There are some who deem it to their advantage to hold the ball in the palm of the hand, but the plan is injudicious, and will in no way assist the object in view.

The spin of the ball and the judgment requisite to puzzle a batsman, are matters entirely of experience, and can be learned only after the bowler has acquired the art of hitting the stumps with certainty.

If you aim to be an absolute expert in the way of bowling, you will have to cultivate other faculties than those with which the mere possession of a certain amount of bodily strength has endowed you. The science of batting has improved so much, and developed so marvelously with the proportionate improvement in the condition of cricket grounds, that the old order of bowling has changed in a surprising manner, giving place to a new and vastly more intelli-



STOPPING A GROUND BALL.

gent state of things. Indeed, to be a skilful bowler nowadays requires a degree of mental acumen that was almost unnecessary in the past.

In the majority of elementary treatises which have been written on cricket, there has been little or no allusion made to fielding, which is certainly one of the most important qualifications in a good cricketer. A good bat may be unluckily caught, and a



STOPPING A GROUNDER WITH ONE HAND.

good bowler may not be on the spot for the day; and then, if bad men be in the field, they become mere clogs upon the other men on their side, and do more harm than good. It is not, therefore, by any means a waste of time on the part of the youthful cricketer if he steadily sets to work and learns his duties in the field, by carefully watching the movements of masters in the art.

In the first place, it will be universally admitted that the primary object of a man standing at any place is to catch the batsman out or to save runs. But even with this laudable object in view, it is strange to see the awkward manner in which many so-called cricketers set about the task. Often in the case of a high catch they hurry up to the ball in a state of excitement, which prevents them from taking a steady look at it, and judging it properly. Their legs straddle under them, and their hands are wide apart. Holding a catch in such a position is only a

matter of chance, and it is frequently the case that the lucky fieldsman is even more astonished at his success than the lookers-on.

A golden rule for catching high hits is to get as *well under* the ball as possible, and judge where you think the ball will pitch. Keep your wrists almost together on a level with the lower part of your chest, but a little distance away from it, with the palms of your hands facing each other, and the tips of the fingers upwards, and about eight inches apart. By this means you will have a sort of box to catch the ball in, and the position of your hands will give you a chance of hugging it to your body, if you do not catch it clean, and the ball tries to elude your grasp. In the case of sharp catches, quickness of eye alone is of avail, and there is generally little time to make elaborate preparations. It therefore necessitates a field near the wickets keeping a very sharp look-out, or the chance will have been given and missed, before he fairly knows anything about it.

Backing up the wicket-keeper, or the bowler, or another field, in cases where the ball is thrown in, or hit to them sharply, is the bounden duty of the careful field, and a conscientious carrying out of this work has saved many a match from being lost. It is not by any means necessary for a field to wear himself out by too great exertions, and running after another man's ball; but the virtue of backing up should never be lost sight of.

The last important point in fielding is throwing-in to the wicket-keeper, and many a good field in other respects is simply a nuisance to his side from the carelessness of his throwing-in. On all occasions the ball should be thrown in as low as possible, provided it does not roll along the ground.

GOLF

THOUGH this is the national game of Scotland, it is now largely played in England, Ireland and other parts of the world. It is an enjoyable and healthy amusement, involving as it does a great amount of muscular exercise and plenty of walking, without at the same time calling for those spasmodic outbursts of violent energy which render several outdoor games simply "forbidden fruit" to hundreds of boys and young men.

It is played over "links" (*English*, "downs" or "commons"); and the "course" will be none the less pleasing to keen golfers should it contain a fair sprinkling of sandpits, broomy knolls, and other "bunkers" or "hazards" (as they are styled), which it is the chief aim and prime duty of the player to avoid if he possibly can do so. Throughout the common there is a series of circular holes, four inches in diameter, situated at various distances, ranging from 80 to 500 yards from each other, which are generally cut on a patch of smooth turf, to facilitate "putting"—the gentle tapping of the ball as it gets near the hole.

The players are either two in number, the commoner and simpler arrangement, or four (two against two, constituting what is known as a "foursome"), in which latter case the two partners strike the ball on their side alternately. The object of the game is to drive the ball from hole to hole round the course in the fewest number of strokes, the player (or pair of players) succeeding in "holing" the ball in the fewest number winning that hole.

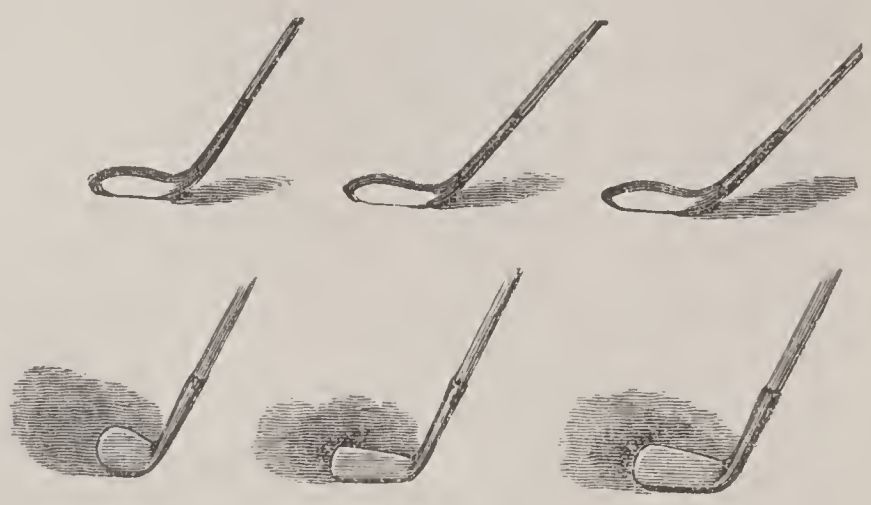
The greatest number of holes thus gained in one or more rounds ordinarily decides the match, though sometimes it is agreed to award victory to the smallest aggregate number of strokes taken to hole the course. Each player must be furnished with a set of clubs of different lengths and shapes, to be



DRIVING.

employed according to the position of the ball or distance to be driven; for the ball, having been struck from the "tee" (a snuff of sand, or tuft of grass, to give the requisite elevation for a full drive to start with), must afterwards be struck as it happens to lie, and must not be touched by anything except a club until it reaches the hole—saving in the cases provided for in the rules.

The golfer's tools are numerous and varied, consisting of the *play-club*, the *grassed-driver*, the long, middle, short and baffing *spoons*, the heavy and light *irons*, the *cleek*, the *niblick*, and the driving and green *putters*. This is a formidable list; yet the beginner need not be disheartened. Armed with a *play-club*, a *cleek* and a *putter*, he may acquire such proficiency as will afford him many a



THE CLUBS.

The first row are the Spoon, Putter, Driver.
The second row are the Niblick, Cleek, Sand-iron.

good day's sport; and as he advances in skill he may complete his set. The three implements named may be had for thirteen or fourteen shillings.

The *play-club*, varying in length from forty-four inches downward, should be selected inclining rather to stiffness than to springiness in the shaft, with a medium-weighted flattish head, neither too deep in the face nor too broad in the back. Its primary purpose is to drive long raking shots from the tee; but it is also useful in playing through the green, when the ball lies in a tolerably good position.

It should be grasped firmly with the left hand at the extreme end, the right being held loosely to act as a guide, both hands being kept close to each other, the wrists easy, and the thumbs over, not along, the shaft, while the knees should be a little bent. Then the club should be drawn slowly back over the right shoulder, but without touching it, and

brought smartly down to the ball—the swing describing three-fourth of a circle. The ascent can scarcely be too deliberate or the descent too rapid. But during the operation the eye must remain steadily fixed upon the ball, else it will either be missed altogether or struck on the top.

No attempt must be made to press the shot, which is always fatal, as sureness of aim and farness of flight are more the result of art than strength. These conditions lie at the foundation of style, and patience and attention will soon carry them into successful practice. But of no less importance is the manner in which the ball is addressed.



PUTTING.

This depends on the stand. The feet should be from thirty to thirty-six inches apart, the left toe being turned in slightly in front of, and nearly opposite to, the ball. A careful study of the proper position will prevent the ball being sent off the course to the right, by standing too near it, or to the left, by standing too far from it.

The *putter* is rightly regarded as the deadliest weapon in the golfer's armory, as it has decided many a hard-fought contest. Thirty-six inches long, it should possess an absolutely stiff, slender, upright shaft, slightly curved, with a medium head, broad-faced, and weighted with plenty of lead to insure steadiness. This club comes into play as the hole is approached, and necessitates dexterous manipulation; as not only has distance to be judged, but the undulations of the ground and the impeding force of the grass have also to be calculated.

Rules of the Game.

It must be explained that when both parties hole the ball in the same number of strokes, the hole is halved and counts to neither. Obviously, whoever gains the majority of holes wins the match, which may be finished, however, without completing the round, if one of the sides has placed more holes to its credit than remains to be played. You are said to be "dormy" when it is impossible for you to lose, as, for instance, if you are two holes ahead and there are only two to play, because, even should your adversary win the last two, the match would be drawn. Disparity between the competitors is balanced by "odds," which serve the same purpose as points in billiards—the less skilful getting a stroke to every hole, or every second or third hole, as the case may be. The advantage lies here, that if the ball is holed by each in six strokes, the player receiving the odds gains that hole by deducting his allowance; or if he takes seven to his opponent's six, it is halved.

In conclusion, it may be desirable to point out that the game of golf ought to be played on links, commons or downs that are not very much frequented, as cases are on record where serious injury has resulted to persons who have accidentally received a blow from a golf ball.

The costume of the golfer is simple enough. A cap, a jacket or short-sleeved roomy shooting-coat, loosely fitting trousers,



HENLEY REGATTA ON THE THAMES, ENGLAND

woolen socks and strong boots, are the staples of his wardrobe. Cricketing shoes are a nuisance; and as a safeguard against slipping, too many rough nails in the soles are worse than having none at all. A good waist belt is preferable to braces, which do not give the muscles of the shoulders sufficient freedom. Discarded white kid gloves will prevent blisters arising from the friction of the clubs; but the left hand only stands in need of such protection, and the fingers of the glove may be cut off below the second joint

FOOT-RACING

IN order to prepare himself for a hundreds yards race (irrespective of the training, of which we shall treat generally in due course,) the candidate cannot do better than begin by steady walking exercise, at a medium rate of three and three-quarter miles to four miles an hour, of about five miles in the day, to harden his muscles; but much walking exercise should not be indulged in within a fortnight of a 100 yards race, as it has a tendency to make the knees and ankles stiff. He may run about 200 yards twice during his walk, but should only run briskly, not violently; while he is "soft" it is a great mistake to put any undue strain on the ligaments of the body.

As he becomes firmer in muscle, he may reduce the distance which he runs, and cover it more rapidly, until he can run the actual 100 yards at top speed. Still, it is wise not to run the course every day at his *very* best; the squeezing the last ounce out of the powers of the body too often tells a tale, even in so short a spin. If he runs the distance within two or three yards of his best powers this will do for two days out of three. Every third day he may see what he can really do, and try for himself whereabouts in the course he best makes his one principal rush.

A 600 yards race is not frequently run at a uniform pace; there is some space which the runner covers at greater speed than any other. The runner should practice starts, which are all important in a short spin. He should stand thus: one foot (left for choice,) about its own length and three inches more in front of its fellow, the body leaning very slightly forward, and the weight on the fore foot.

Mile Racing.

For this more prepartory walking exercise is wanted, and the mile should be run daily at first, but to commence with, the pace should be little more than a jog, at about two-thirds of the runner's real powers. The speed may be increased as practice progresses, but the full distance should not be run out to the last gasp more than once a week, and not at all within four or five days, or even a week, of the race. The same for two miles, only that a still longer rest is needed between the last trial at full speed and the day of the race.

A common error in all athletics is a feverish desire to gain success in a moment. The youth stands and sees the trained athlete exhibiting his feats of wonderful skill, and not only does he wish to do the same, but he wishes to do it immediately. He is restless and impatient, chafes at the long training required, would perfect himself in a week



406 THE FINISH OF THE RACE.

or a month, and fails to comprehend the fact that there are some things which cannot be done in a day. The fastest runners do not become so at once ; talk with them and you will know what training they have undergone. Some who have promised well drop out entirely and disappear, for the reason that their strength and muscles have been put to a strain that was too severe. It needs the very best judgment and discretion to develop the physical powers to their full limit without causing them to break down in the process. Injury for life may be inflicted in a contest lasting only three minutes.

Another thing is to be considered in foot-racing : the athlete must know where his best chances of success lie. Some can run across the country all day like wild Indians without breaking down. Others can run five miles, others but one mile, and the majority even less than this distance. The man who would be distanced in a mile run might win a two hundred and twenty yards dash from the entire field.

ROWING

SINCE the introduction of the sliding seat, the art of rowing has undergone material changes, but it is open to question whether style has gained by the alteration in the seat. The sliding seat is an American invention, and consists of a seat which is capable of sliding backwards and forwards, through the motion of the oarsman's body. This has the effect of reducing the swing forward to a great extent, as the crew slide forward in a more upright position than was formerly the case.

The three main principles of successful rowing are, first, perfect time, secondly, getting the oar into the water square, that is, at right angles to it, and thirdly, rowing the stroke right out and using the legs well. With reference to "time," all that can be said in the way of advice to a beginner is, be determined never to remove your eyes from the shoulders of the man in front of you. Follow his every motion, and if the time is wrong, you will not, at all events, be to blame. Only by observing this rule can the whole crew row as one man.

Be careful not to hurry the body forward, under the impression that you may otherwise be late, for this only makes the boat roll, and nothing demoralizes a crew more than that. Be sure to bring your hands well up to your body at the end of the stroke, and on no account keep them there longer than you are able. A quick recovery after a stroke and the free use of the legs the moment the oar gets into the water are important agents in the acquisition of that "lift" which is so desirable to obtain in boat-racing.

A well-coached crew will, when rowing, fairly make their boat seem to jump out of the water at the beginning of each stroke ; and the value of all work done in *front of the rowlocks*, that is, in the first part of the stroke before the blade of the oar comes level with the oarsman's body, is almost beyond estimation. As regards the oar itself, it should be brought straight home to the chest, the knuckles touching the body about an inch or less below the bottom of the breast-bone, where the ribs branch off, thus every inch of water is made use of. When there, the hands should be dropped

straight down, and then be turned over and shot out again along the legs, and the body should follow without the least pause. If this is not done, the oar will be feathered under water, and thus the boat will be buried, water will be thrown on the next oar, and the recovery will be impeded.

To effect a quick recovery the back must be perfectly straight, the knees must not have been dropped down too low, and the straps must not be used too much; a light touch is all that is needed. The muscles of the body—in this case those that cross the stomach—must be used, and not the boat itself, of which the strap is a part. The body should be swung evenly forward from the hips, not with a jerk or a plunge, or quicker at one time than another, but freely



A BOATING PARTY.

and easily, as if the hip-joint worked well and not stiffly.

Be careful always to get the oar in *square;* if it goes into the water obliquely the blade will get in much too deeply, and the ship will roll; be sure also that the blade of the oar is well covered by water, but no more. Deep rowing makes the boat roll, and if the oar is not in deep enough an insufficient amount of work is done, and a splash is also caused which inconveniences the other men. In swinging backwards and forwards, be sure to do so straight between the knees. Many otherwise good men, screw across the boat, and thereby not only spoil the appearance of the crew, but make the boat unsteady, and so spoil the pace. Feathering under water is a very common fault in the best of crews, and it consists in commencing the feather before the oar is well out of the water. This is never the case when the stroke is rowed well out, and the hands brought well up to the body before the feather is commenced.

BOXING

BY boxing we do not mean prize-fighting, for this is only the brutal perversion of a healthful and manly sport.

Take your position, as shown in the annexed figure, page 410.

The left arm must be in advance, playing backwards and forwards easily, the fist about on a level with the centre of the chest. The right arm held across the body, but not stiffly.

Keep the chin down *and the mouth shut.* If you want to know the reason for this last recommendation being printed in italics, you may have your mouth open, just for once, and get somebody to give you a slight tap on the jaw. But you had better take the hint without trying the experiment.

The beginner should, if possible, commence sparring with an antagonist who knows something of the art; but if this is impracticable, as in the case of a couple of lads at a country house who want to amuse themselves with boxing, let both follow the rules carefully, and stop directly they find themselves hitting wildly, or in any way approaching to fighting at close quarters—infighting, as it is called. So long as they keep to out-fighting, which is hitting and guarding at arm's length, they will be able to correct faults and improve themselves.

To lead of with the left at the head is the very groundwork of boxing, and cannot be practised too carefully. It must be a dart forward, with the whole weight of the body behind the blow, and the movement never can be rapid enough. The object is to strike before the opponent can put his guard up, and the drawing back the hand, or the advance of either hand or foot, the minutest fraction of a second before the other would warn him of the attack and frustrate your intention.

Take great care not to push or chop downwards; with big gloves on his own hands and on those of his opponent, the novice sees very little opening, and is apt to get into a slovenly style of hitting. Be sure, therefore, to clench your fist at the moment and dart it out like a snake's tongue.

In hitting with the left at the body, slightly draw back the arm and turn the elbow outwards, ducking the head to the right as you advance the left foot, to avoid

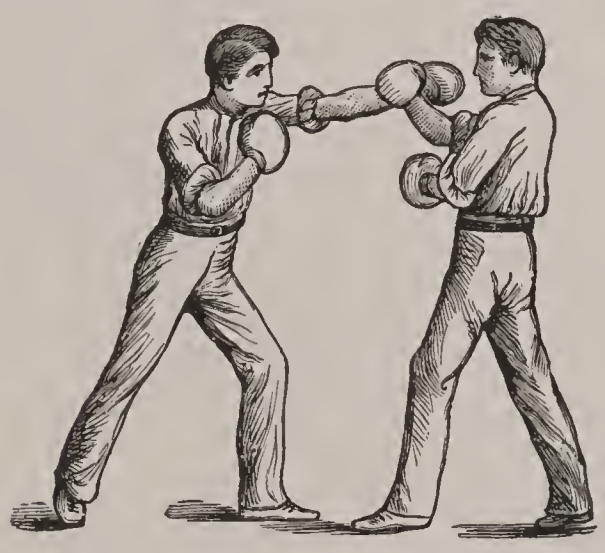
being stopped by a blow in the face, and spring quickly back before raising the head again.

The body is guarded by pressing the arm close to the body and receiving the blow upon it, or, better still, by divining your antagonist's intention, and stopping him before he can duck with a straight shoot in the face. But in merely practising the lead off mentioned—head, head, body—the former guard must be adhered to.



POSITION.

In loose sparring the body blow should generally be prefaced by a feint at the head, in order to draw the adversary's right arm up for the head guard, which will leave the "mark" open to your attack. The guard for this is to bring the left arm across the body to receive the blow, while the right is thrown up to guard the head.

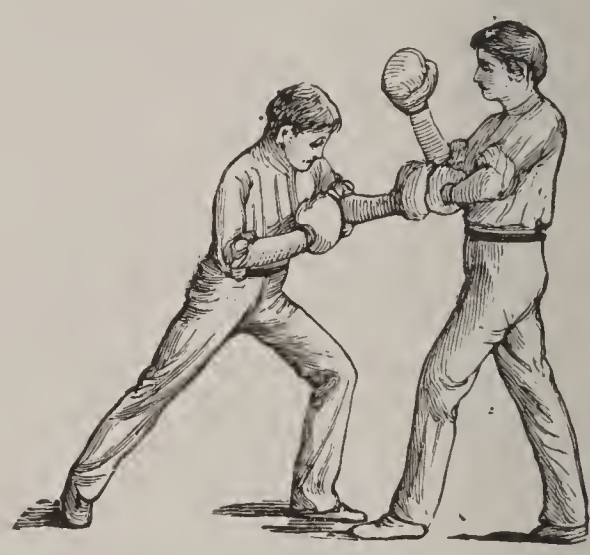


LEADING OFF WITH THE LEFT.

Feinting with the left is done by darting out the left arm, and slightly advancing the left foot; feinting with the right by advancing the left foot and drawing the right arm back.

To counter is to hit at the same time as your adversary, the object being to take a light blow and inflict a heavy one. Your eye must always be kept fixed on your opponent's, and thus you may often divine his intentions. When he is intent on aiming a blow at you he is thinking less of guarding himself, and if you can forestall him by the smallest fraction of a second, he is *hit off*, as it were, as he delivers his attack.

Pay especial attention to the use of the legs and feet, for if these get confused, their owner must lose his balance, and become powerless either for attack or defence, and a slight blow will suffice to knock him down. You require to step forwards, backwards, sideways as lightly and quickly as possible, always keeping the right foot in rear of the left.



HITTING WITH THE LEFT AT THE BODY.

Thus, when you deliver a blow the whole weight of your body is thrown into it; when you receive one, you *give* to it, as it were, and much of the force is lost. Or, if you step back very smartly, it falls short altogether, while, your left foot being still in advance, you are ready to step up again at the instant and deliver a counter blow.

Your object should be to strengthen the body. One man strikes a blow equal to five hundred pounds; another lifts eleven hundred pounds; another bends his back so that his head rests against his heels; another runs eleven miles in an hour; another turns sixty somersets without resting.

We are greatly delighted with all these—pay our money to see them perform; but as neither one of these could do what either of the others does, so we all know that such feats, even if they were at all desirable, are not possible with one in a thousand. The question is not what shall be done for these few extraordinary persons. Each has instinctively sought and found his natural speciality, but what are the best exercises for everybody? Such as develop lungs and muscles and perfect the whole physical man.

Bicycling

EVERY rider who begins cycling when young has, as in all athletic pursuits, the advantage over those who start later in life. He has the elasticity of frame to learn without unduly straining himself, and he acquires such proficiency that cycling becomes part of his ordinary motion. With the exception of horse and pony riding, we can recall at the moment no one pastime which appeals equally to the old and young, except cycling.

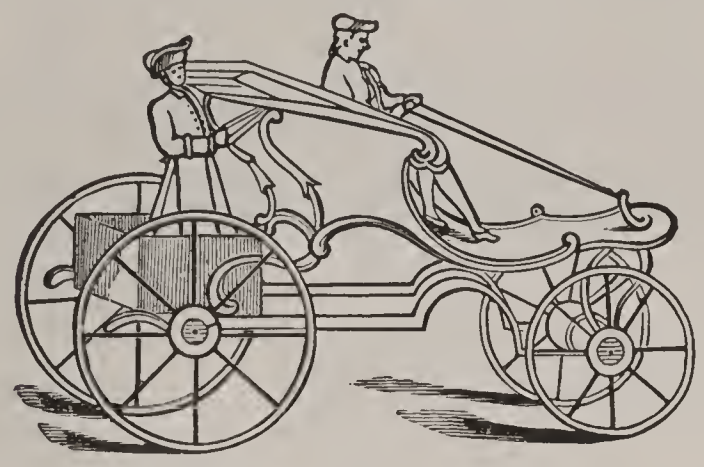
Many of the pastimes of youth, such as marbles, leap-frog, etc., the boy, as he grows to manhood, ceases to care for, and on the other hand a youth has to grow up before he takes kindly to shooting and such like sports. But in cycling extremes of age meet, and both derive in their separate ways pleasure and physical benefit from the wheel. A boy only thinks of whether he likes a pastime, and never whether it does him any good, physically speaking.

When going on a tour the first thing to decide is what will most be enjoyed, good scenery and medium roads; good roads and medium scenery, or what? No fixed distances can be laid down, as the wind, the state of the roads, or the advent of rain may play an unrehearsed but effective part in the proceedings of any day. There is nothing that differs so much in its capabilities as the human stomach, and therefore the sooner the better a boy starts on the principle that he will be either a fool or a physician at forty, if he does not ere that period ascertain what he can eat to the best advantage.

Cycling Medically Viewed.

It must therefore be a great pleasure to parents to know that in the indulgence of cycling their children, male or female, are not only getting amusement, but also gaining health. It was unfortunate for cycling that the hobby-horse, which placed a man in the worst possible position, namely, straining his leg whilst it was extended to its utmost, should at the outset have prejudiced the medical profession against cycling.

Now, however, almost without exception, the faculty are practically unanimous in its praise; many well-known members who could be named being absolute enthusiasts. The advantages of cycling are now no longer a moot point, and in the words of a



QUADRICYCLE—1776.

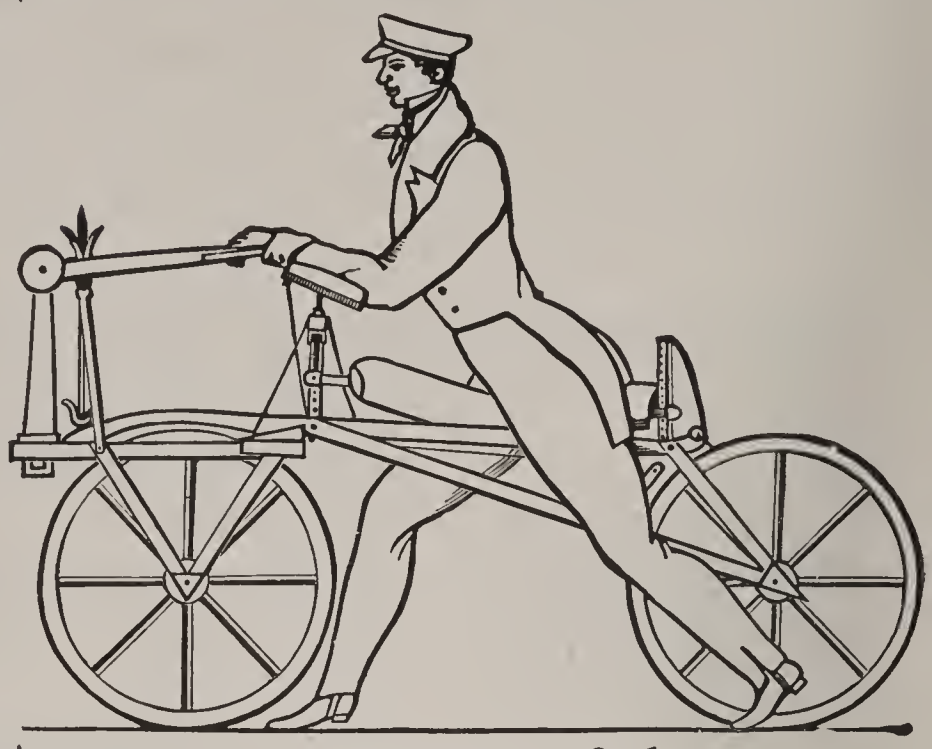
well-known physician, every person "can ride with benefit to himself, except those suffering from consumption and heart disease, or who are decidedly prone to apoplexy." So long as a watchful eye is kept on the young rider to see that he does not overdo it and that he suffers no inconve-



CELERIPEDE—1816.

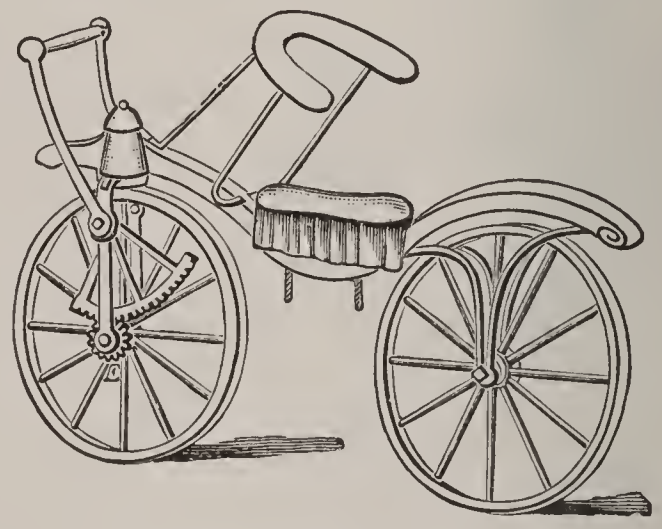
nience from his saddle, there is no cause for anxiety.

There are not many regular schools for teaching nowadays, but most venders of machines will make arrangements for a purchaser to be taught by one of their men. Failing this, however, it only requires the assistance of a companion (two for choice) a little stronger than the learner, to enable one



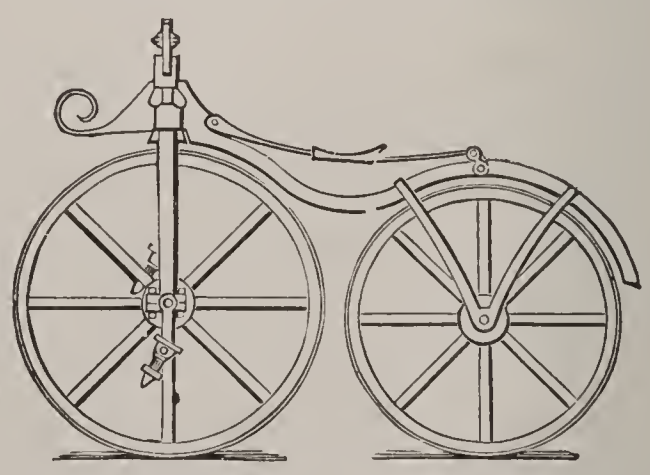
DRAISINE—1816.

novice to easily teach another. The best preliminary step is for the learner to wheel his



HOBBYHORSE—1821.

bicycle and letting it fall gently towards him, to feel it spring upright again as he turns



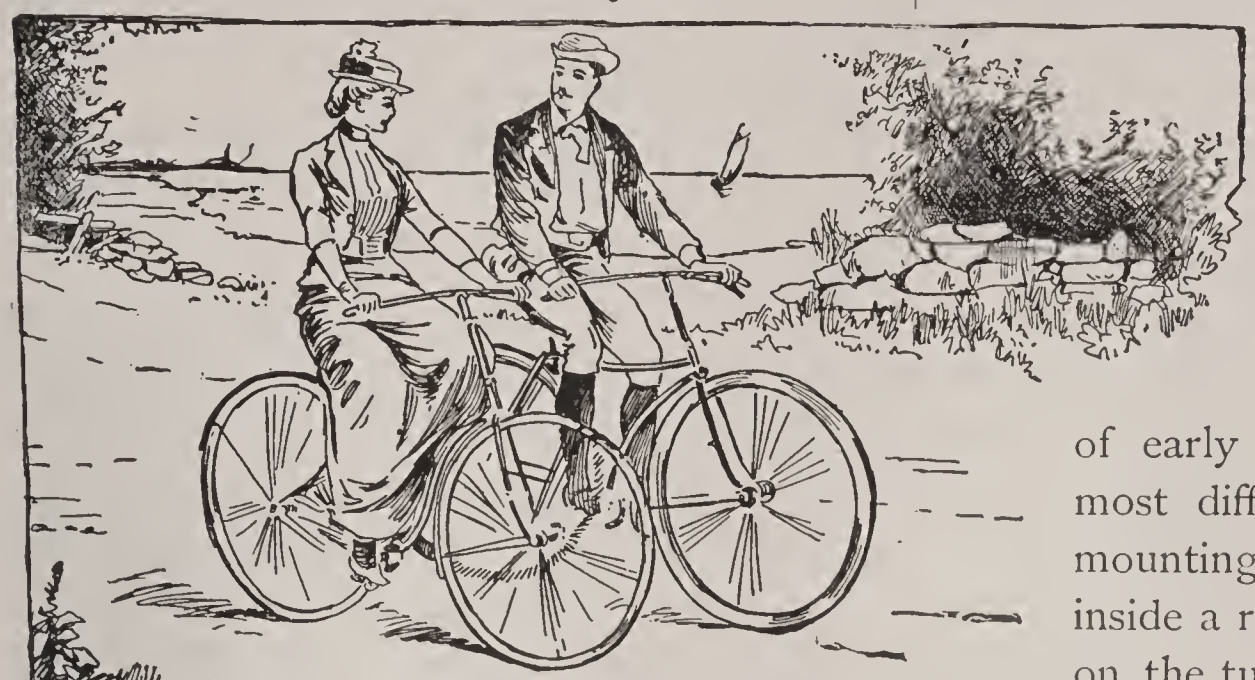
LALLEMENT'S VELOCIPEDE—1866.

the front wheel *towards* him, that is, the same way the machine is falling. He will then realize better than he could whilst in



A FIELD DAY IN ARCHERY

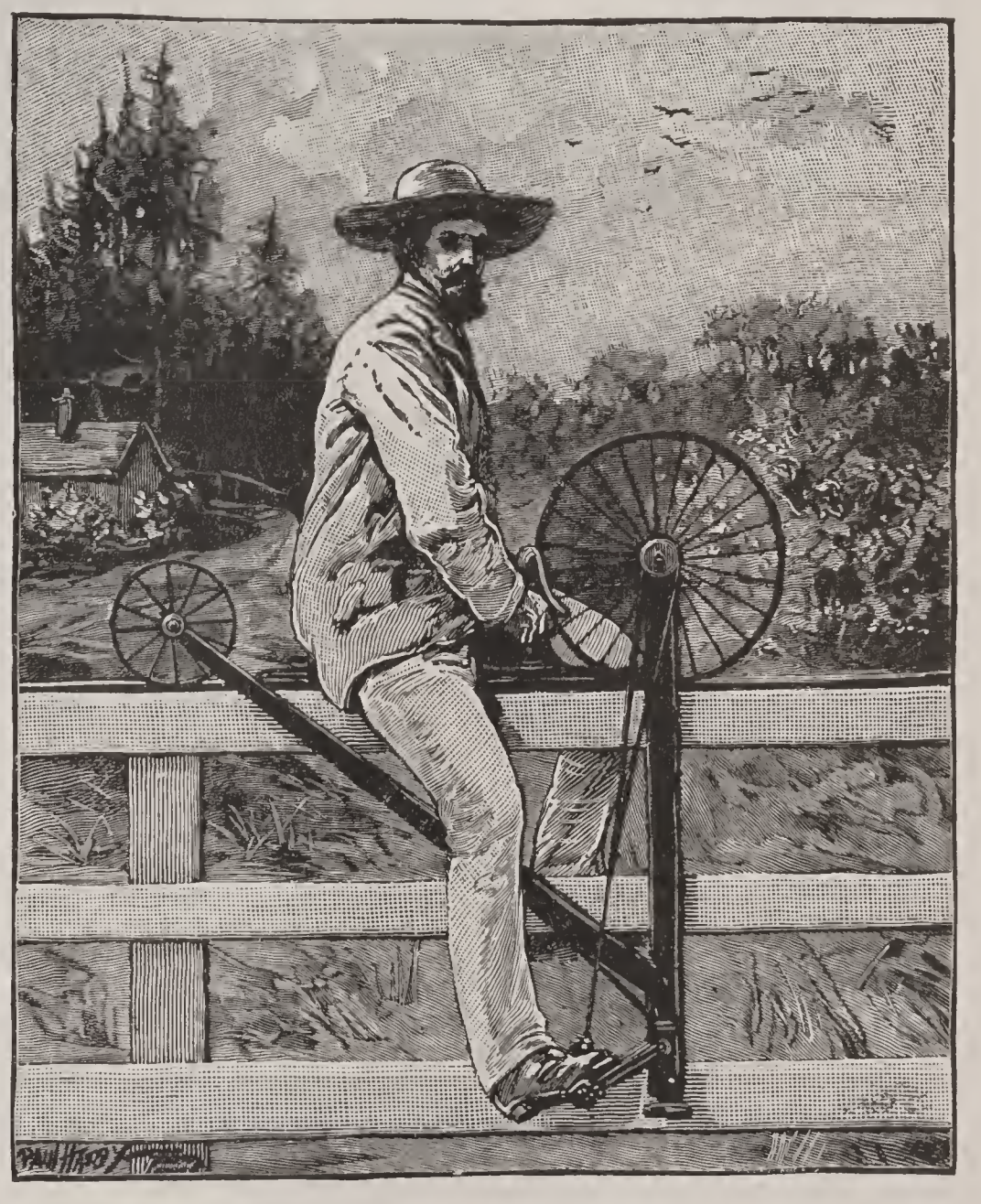
the saddle how a bicycle rights itself. His wits are clearer when on *terra firma*.



A DASH ACROSS THE COUNTRY.

Having thus gained an idea of how a bicycle is kept on end, the learner, with a friend on each side of him, can seat himself in the saddle, seeing first that it is at a proper height. The beginning and end of ease in cycling depend on this, and the gauge is as follows: When the rider is seated on the saddle, the centre of the bottom of his foot should just be able to touch the pedal at its lowest point. In pedalling, however, he uses the ball of his foot, that is, midway between the centre and the toe ends, and this enables him to use his ankles as well as his thrust of leg; but ankle action comes later —not in the learner's stage.

Every modern machine is made with handle-bars so wide that no contraction of the chest can occur in holding them; but riders should insist on the handles being capable of being raised so high as to obviate the necessity of craning forward. When spurting, as later on in his career the novice will, he will crane forward, but he should be able to avoid being obliged to do so at other times. Many modern machines are faulty in this respect—handles too low—as regards comfort, appearance and health; but it only requires a buyer to insist on a longer tube for adjustment of his handles to be comfortable. Learning to ride is the easiest part of early cycling. Mounting is the most difficult, and next comes dismounting. With a professional teacher inside a room the rider will be always on the turn, which although increasing his earlier difficulties, makes him a better rider when left alone than if he had learnt on a straightaway course. If he learns in the street let it be in a secluded one, with a very slight slope. Here with a friend or



A BICYCLE RAILROAD.

friends to hold him up, he will soon acquire the balance, but if he has a fall or two it will give him confidence by letting him know the worst that can happen. It is useless going on learning when fatigue sets in; either rest awhile or stop till next day. An hour at a time when learning is enough for anyone.

Between Mount Molly and Smithfield, New Jersey, there is a railway for bicyclists which will be understood from our illustration. The single rail is mounted on a fence, and the bicycle is inverted in the manner shown. Each passenger is his own locomotive, and thus combines exercise with travel. There is no danger of falling off and no trouble about steering, so that the passenger can freely look about him and enjoy the air. It is proposed to double the track for going and coming passengers, and to provide stations at intervals with supplies of vehicles.



THE CYCLE IN USE ON THE WATER.

The combined tricycle and boats shown in the figure is an American invention for road and river travel. Twin boats are fastened to a tricycle having wheels fitted with paddles, and when in the water they can be guided by the steering wheel, which is made as a circular disc. The boats can be disconnected from the tricycle at will, and serve to hold luggage, fishing tackle, and other paraphernalia.

It is evident that the bicycle has come to stay. No new method of locomotion ever leaped so rapidly into public favor. While there have been differences of opinion as to the physical advantages of cycling, the weight of this opinion is decidedly in favor of it. The exercise is healthful, when not overdone. Even walking may be overdone, and is liable to the same objection that might be made against the wheel. A person must know when his ride has been long enough, and knowing this he should have will power enough to stop.

It is nothing uncommon now to see business men in all parts of our country making use of the bicycle. It gives promise of a more robust health and a better physique.

Cycling has a short but brilliant history of the past. In endurance man mounted on a cycle has beaten the strongest and fleetest of domestic animals, the horse, out and out in a twenty-four hours' ride. What horse could compete against a cycler who covers, as some have done, over 300 miles a day? Horses have trotted a mile rather faster, but where is the horse which could cover forty miles under two hours, as not one but several cyclists have done in the fifty miles championship? What horse could turn out morning after morning, and trot or gallop to the tune of over a hundred miles a day, as have some cyclists in the past few years? A practical knowledge of cycling tends to increase one's wonder at these "giant performances."

THE LARGEST THINGS IN THE WORLD

HIGHEST NATURAL BRIDGE in the world is at Rockbridge, Virginia, being 200 feet high to the bottom of the arch.

LARGEST CIRCULATION of paper money is that of the United States, being 700,000,000, while Russia has 670,000,000.

LARGEST INSURANCE COMPANY in the world is the Mutual Life of New York City, having cash assets of $108,000,000.

MOST REMARKABLE ECHO known is that in the castle of Simonetta, two miles from Milan. It repeats the echo of a pistol sixty times.

LARGEST VOLCANO in the world is Etna. Its base is 90 miles in circumference; its cone 11,000 feet high. Its first eruption occurred 474 B. C.

LARGEST TREE in the world, as yet discovered, is in Tulare County, California. It is 275 feet high, and 106 feet in circumference at its base.

LARGEST DESERT is Sahara, in Northern Africa. Its length is 3000 miles and breadth 900 miles; having an area of 2,000,000 square miles.

LARGEST DIAMOND in the world is the Braganza, being a part of the Portuguese jewels. It weighs 1880 carats. It was found in Brazil in 1741.

TALLEST MAN was John Hale, of Lancashire, England, who was nine feet six inches in height. His hand was seventeen inches long and eight and one-half inches broad.

HIGHEST MONUMENT in the world is the Washington monument, being 555 feet. The highest structure of any kind is the Eiffel Tower, Paris, finished in 1889, and 989 feet high.

IT IS CLAIMED that crows, eagles, ravens and swans live to be 100 years old; herons, 59; parrots, 60; pelicans and geese, 50; skylarks, 30; sparrow hawks, 40; peacocks, canaries and cranes, 24.

GREATEST CATARACT in the world is Niagara, the height of the American Falls being 165 feet. The highest fall of water in the world is that of the Yosemite in California, being 2550 feet.

MOST ANCIENT CATACOMBS are those of the Theban kings, begun 4000 years ago. The catacombs of Rome contain the remains of about 6,000,000 human beings; those of Paris, 3,000,000.

LARGEST NUMBER OF CATTLE ever received in one year was that of Chicago in the year 1884, being 1,874,984 beeves, 30,223 calves, 5,640,625 hogs, 749,917 sheep, and 15,625 horses. It required 9000 trains of 31 cars each, which, if coupled together, would reach 2146 miles.

LARGEST PRODUCING FARM in the world lies in the southwest corner of Louisiana, owned by a northern syndicate. It runs one hundred miles north and south. The immense tract is divided into convenient pastures, with stations of ranches every six miles. The fencing alone cost nearly $50,000.

UNION ARCH of the Washington Aqueduct is the largest in the world, being 220 feet; 20 feet in excess of the Chester Arch across the Dee in England; 68 feet longer than that of the London Bridge; 92 feet longer than that at Neuilly on the Seine, and 100 feet longer than that of Waterloo Bridge, London. The height of the Washington Arch is 100 feet.

LARGEST SHIP ever built, the Great Eastern, recently broken to pieces and sold to junk dealers, was designed and constructed by Scott Russell, at Maxwell, on the Thames. Work on the giant vessel was commenced in May, 1854. She was successfully launched January 13, 1858. The launching alone occupied the time from November 3, 1857, until the date above given. Her total length was 600 feet; breadth, 118 feet; total weight when launched, 12,000 tons. Her first trip of any consequence was made to New York in 1859-60. She has been broken and sold for old iron.

IN 1775 there were only twenty-seven NEWSPAPERS published in the United States. Ten years later, in 1785, there were seven published in the English language in Philadelphia alone, of which one was a daily. The oldest newspaper published in Philadelphia at the time of the Federal conven-

tion was the *Pennsylvania Gazette*, established by Samuel Keimer, in 1728. The second newspaper in point of age was the *Pennsylvania Journal*, established in 1742 by William Bradford, whose uncle, Andrew Bradford, established the first newspaper in Pennsylvania, the *American Weekly Mercury*, in 1719. Next in age, but the first in importance, was the *Pennsylvania Packet*, established by John Dunlap in 1771. In 1784 it became a daily, being the first daily newspaper printed on this continent.

STATISTICS OF TWENTY LEADING LIBRARIES in this country show that, of over $500,000 spent, a little over $170,000 spent was devoted to books, while other expenses consumed $358,000. In the Mercantile Library of New York City it cost 14 cents to circulate a volume; in the Astor, 14½ cents are



THE EIFFEL TOWER.

spent on each volume, or 27 cents on each reader; in Columbia College Library, 21½ cents per reader; in the Library Company of Philadelphia, 26 cents per volume, or 10 cents per head. The largest library in the world is the National Library of France, founded by Louis XIV., which now contains 1,400,000 books, 300,000 pamphlets, 175,000 manuscripts, 300,000 maps and charts, 150,000 coins and medals, 1,300,000 engravings and 100,000 portraits. The Library of Congress is the largest in this country.

MOST EXTENSIVE MINES in the world are those of Freiberg, Saxony. They were begun in the twelfth century, and in 1835 the galleries, taken collectively, had reached the unprecedented length of 123 miles. A new gallery, begun in 1838, had reached a length of twelve miles at the time of the census of 1895. The deepest perpendicular mining shaft in the world is located at Prizilram, Bohemia. It is a lead mine, 3280 feet deep. The deepest coal mine in the world is near Tourney, Belgium; it is 3542 feet in depth, but, unlike the lead mine mentioned above, it is not perpendicular. The deepest hole ever bored into the earth is the artesian well at Potsdam, which is 5,500 feet in depth. The deepest coal shaft in the United States is located at Pottsville, Pa., 1800 feet. From this great depth 400 cars, holding four tons each, are hoisted daily. The deepest silver mine in the United States is the Yellow Jacket, one of the great Comstock system at Virginia City, Nevada; the lower levels are 2700 feet below the hoisting works.

LARGEST STONE BRIDGE on the face of the earth is that finished in May, 1885, at Lagang, China. Chinese engineers had sole control of its construction. It crosses an arm of the China Sea, is nearly six miles in length, is composed entirely of stone, and has 300 arches, each 70 feet high. It is the most colossal structure ever reared by man, yet we sneer at "heathen Chinee." The largest truss iron bridge in the world crosses the Firth of Tay, Scotland. It is 18,612 feet in length and composed of 85 spans. The longest wooden bridge in the world is that crossing Lake Ponchartrain, near New Orleans, La. It is a trestle-work 21 miles in length, built of cypress piles which have been saturated with creosote oil to preserve them. The highest bridge in the United States is over Kinzina Creek, near Bradford, Pa. It was built in 1882, has a total span of 2,051 feet and is 301 feet above the creek bed.

"CENTENNIAL OX," bred by Samuel Barkley of Somerset County, Pa., was the largest specimen of the bovine the world has ever seen. He weighed 4900 pounds the day he arrived in Philadelphia. This mountain of beef was of mixed stock, being short-horn, native "scrub," and Ayrshire, the short-horn predominating. After the exhibition was ended the giant ox was butchered and exhibited as "show beef" at Philadelphia during the holidays of 1876. A short-horn steer weighing 4100 pounds was slaughtered at Detroit in 1874. A. N. Meal, of Moberly, Mo., formerly owned the largest cow in the world. Mr. Meal disposed of her in 1883, the Cole Circus Company being the purchasers. She weighed the day of sale 3296 pounds. Mr. John Pratt, of Chase County, Kan., was formerly the owner of a cow weighing 3200 pounds. She was of the common "scrub" stock and stood nineteen hands high.

GREAT PYRAMID OF CHEOPS is the largest structure of any kind ever erected by the hand of man. Its original dimensions at the base were 764 feet square, and its perpendicular height in the highest point 488 feet; it covers four acres, one rood, and

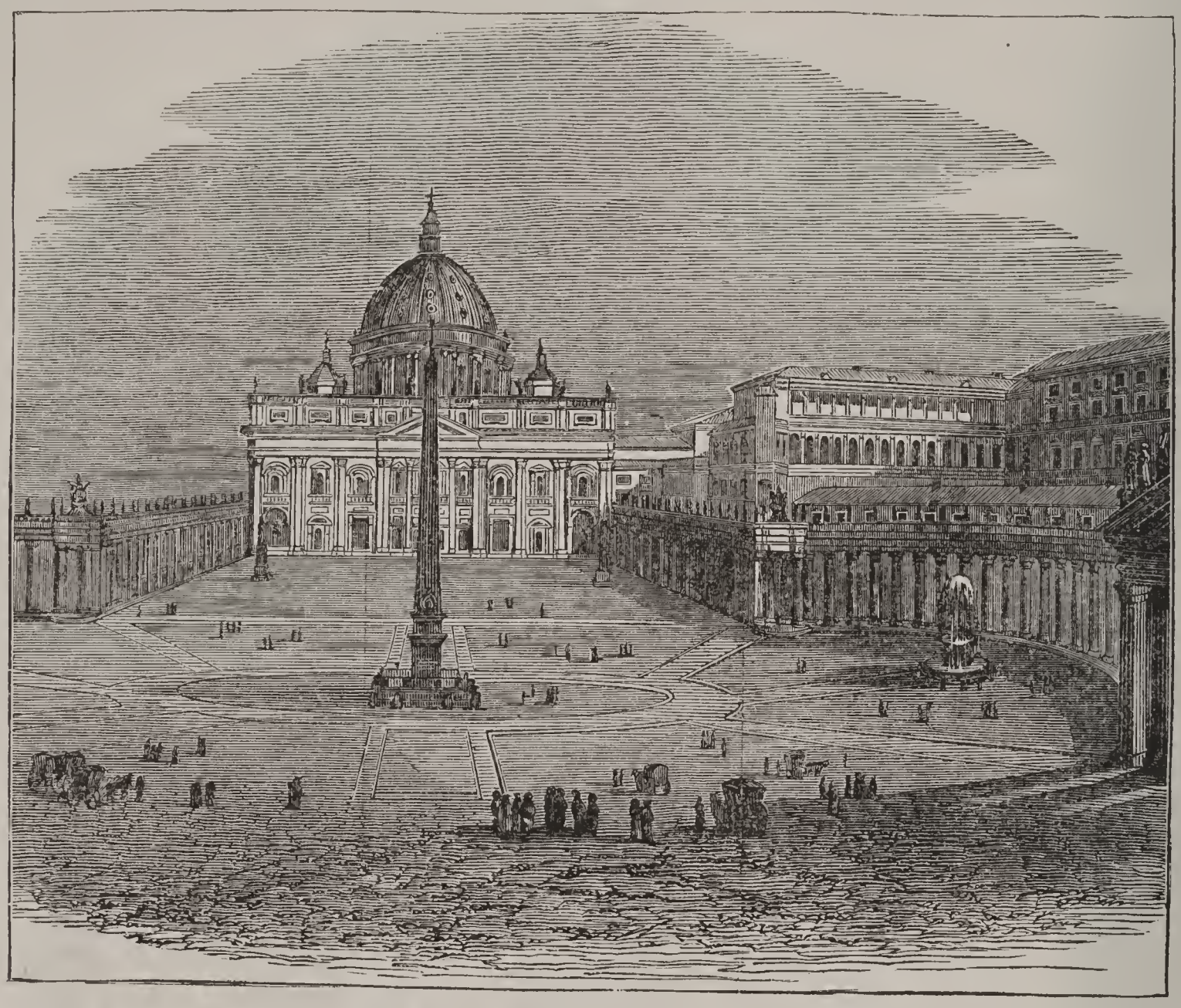


VIEW OF THE NATIONAL CAPITOL AT WASHINGTON.

twenty-two perches of ground, and has been estimated by an eminent English architect to have cost not less than £30,000,000, which in United States currency would be about $147,200,000. Internal evidence proves that the great pyramid was begun about the year 2170 B. C., about the time of the birth of Abraham. It is estimated that about 5,000,000 tons of hewn stone were used in its construction, and the evidence points to the fact that these stones were brought a distance of about 700 miles from quaries in Arabia.

LARGEST AND GRANDEST TEMPLE OF WORSHIP in the world is the St. Peter's Cathedral at Rome. It stands on the site of Nero's circus, in the northwest part of the city, and is built in form of a Latin cross. The total length of the interior is 612½ English feet; transept, 446½ feet; height of nave, 152½ feet; diameter of cupalo, 193 feet; height of dome from pavement to top of cross, 448 feet. The great bell alone without the hammer or clapper weighs 18,600 pounds, or over 9¼ tons. The foundation was laid in 1450 A. D. Forty-three Popes lived and died during the time the work was in progress. It was dedicated in the year 1826, but not entirely finished until the year 1880. The cost, in round numbers, is set down as $70,000,000.

CAPITOL BUILDING at Washington, D. C., is the largest building in the United States. The corner stone was laid December 18, 1793, by President Washington, assisted by other Masons. It was partially destroyed by the British in 1814. The present dome was begun in 1855 and finished in 1863. The flag of the United States first floated from it December 12, 1863. The cost of the entire building has been something over $13,000,000. Its length is 715 feet 4 inches; width, 324 feet. It covers 3½ acres of ground. The distance from the ground to the top of the dome is 307½ feet; diameter of the dome, 135½ feet—making fifth as to size with the greatest domes of the world.



ST. PETER'S AND THE VATICAN, ROME.

LARGEST AND COSTLIEST PRIVATE MANSION in the world is that belonging to Lord Bute, called Montstuart, and situated near Rothesay, England. It covers nearly two acres; is built in gothic style; the walls, turrets and balconies are built of stone. The immense tower in the center of the building is 120 feet high, with a balcony around the top. The halls are constructed entirely of marble and alabaster,

and the rooms are finished in mahogany, rosewood and walnut. The fire-places are all carved marbles of antique design. The exact cost of this fairy palace is not known, but it has never been estimated at less than $8,000,000.

LARGEST BODY OF FRESH WATER in the world is Lake Superior. It is 400 miles long and 180 miles wide; its circumference, including the windings of its various bays, has been estimated at 1800 miles. Its area in square miles is 32,000, which is greater than the whole of New England, leaving out Maine. The greatest depth of this inland sea is 200 fathoms, or 1200 feet. Its average depth is about 160 fathoms. It is 636 feet above sea level.

FAMOUS CORLISS ENGINE, the largest ever constructed, and the one used to drive the machinery in the great hall at the Centennial of 1876, is now in the shops of the Pullman Car Company at Pullman, near Chicago, Ill. The writer is aware that this differs from other statements that have been made, it being generally supposed that the Emperor of Brazil bought the engine and removed it to his own country. He did talk of buying it, but the bargain was never consummated. This tireless giant works in an upright position, is over 40 feet high, of 1400 horse-power, and has two 40-inch cylinders and a 10-foot stroke.

LARGEST FERRY-BOAT ever constructed was named the Solano, and is now in use daily conveying trains across the Straits of Carquinez, between Benecia and Port Costa. The Solano is 460 feet long, 116 feet wide, and 20-foot depth of hold. She has 8 steel boilers, 4 rudders and a tonage of 3841 tons. On her decks are 4 railway tracks, with capacity for 48 ordinary freight cars and 2 locomotives, or 28 passenger coaches of the largest build.

HIGHEST BUILDING in the world, not counting the Eiffel Tower, the Washington Monument and the City Hall, Philadelphia, is the Cologne Cathedral. The height from the pavement to the top of the cupola is 511 feet. It is 511 feet long, exactly the same as the height, and 231 feet wide. It was begun August 15th in the year 1248, and was pronounced finished August 14, 1880, over 600 years after the corner-stone was laid.

HIGHEST MOUNTAIN on the globe is not, as is generally supposed, Mt. Everest, that honor belonging to a lofty peak named Mt. Hercules on the Isle of Papua, New Guinea, discovered by Capt. Lawson in 1881. According to Lawson, this monster is 32,763 feet in height, being 3781 feet higher than Mt. Everest, which is only 29,002 feet above the level of the Indian Ocean.

LARGEST STATE in our grand republic is Texas, which contains 274,356 square miles, capable of sustaining 20,000,000 of people, and then it would not be more crowded than Scotland is at present. It has been estimated that the entire population of the globe could be seated upon chairs within the boundary of Texas, and each have four feet of elbow room.

MISSISSIPPI RIVER, from the source of the Missouri to the Eads jetties, is the LONGEST RIVER in the world. It is 4300 miles in length and drains an area of 1,726,000 square miles. The Amazon, which is, without doubt, the widest river in the world, including the Beni, is 4000 miles in length and drains 2,330,000 square miles of territory.

LARGEST CUSTOM-HOUSE in this or any other land is in New Orleans. It was begun in 1848 and over thirty years elapsed before it was finished and ready for use. It is built of Quincy granite, the interior being finished in finest marble. It has 111 rooms; height from the pavement to the top of the cornice is 80 feet, and to the top of the light on the dome 187 feet. The dome itself is 49 feet square and 61 feet high; estimated total cost of building, $4,900,000.

LARGEST HOTEL in the United States, and probably the largest in the world, is located at San Francisco, Cal. It is 9 stories high and cost $3,500,000. It is named the Palace, and has accommodations for 1,500 guests.

FINEST THEATRE in the world is in Paris. It is of solid stone, finished with marble floors, and covers about four acres of ground. La Scala, of Milan, has the largest seating capacity, while the Auditorium at Chicago, completed in 1889, seating 7000 people, ranks second in that respect.

A BLOCK OF COAL exhibited at the Iowa State Fair is thought to be the largest even mined; it weighed 7000 pounds.

LARGEST BOUND BOOK ever made is owned by Queen Victoria. It is 18 inches thick and weighs 63 pounds. It contains the jubilee addresses of congratulation.

LARGEST COAL BREAKER in the world is in operation at Edwardsville Colliery, Luzerne County, Pa. It prepares for market 4000 mine cars of coal every ten hours.

GREATEST ELEVATION ever attained by balloonists was 37,000 feet—about 7 miles. The aeronauts were James Glaisher, F. R. S., and Mr. Coxwell. The ascent was made September 5, 1862, at Wolverhampton, England.

LONGEST SINGLE SPAN OF WIRE in the world is used for a telegraph in India. It is stretched over the River Kistuah, between Bezorah and Sectauagrum. It is over 6000 feet long, and is stretched from the top of one mountain to the top of another, each mountain being nearly 2000 feet high.

TWO LARGEST CASTINGS in the world are in Japan, one at Nara and the other at Kamakura. Both are statues. The one at Nara is 53 feet and 9 inches from the base to the crown of the head. It was first cast in the eighth century, but was afterward destroyed and recast in the year 1223. The Kamakura statue is 47 feet high.

SYDNEY (Australia) LIGHTHOUSE is provided with the largest electric light in the world. It has a power of 180,000 candles and may be seen from ships 50 miles at sea. The next largest is in the Palais d'Industrie and has a power of 150,000 candles. San Jose, California, has the most powerful electric light in the United States, one of 24,000 candle power.

STONE PAVEMENT in front of the residence of the late William H. Vanderbilt, in New York City, is made up of the largest slabs of flagging stone ever put in a single pavement. The stones were taken from quarries in Pike County, Pennsylvania, west of Port Jervis, N. Y., and from the Bigelow quarries in Ulster County, N. Y. The large slab immediately in front of the residence is the largest slab of its kind ever transported from any quarry and cost the millionaire $9200; the entire cost of the pavement was $47,000.

GREATEST INDIVIDUAL LAND PROPRIETOR in the world is Wilson Waddingham, who in 1887 purchased 163,000 acres of land in San Miguel County, New Mexico. His present landed interests amount to 1,500,000 acres, about 500,000 acres more than are claimed for the Duke of Westminster. In 1896 the largest producing farm in the world was one of the same number of acres (1,500,000) situated in the southwest corner of Louisiana. This immense farm is operated by a northern syndicate, with J. B. Watkins as manager.

GREATEST FORTRESS, from a strategical point of view, is the famous stronghold of Gibraltar. It occupies a rocky peninsula jutting out into the sea, about three miles long and three-quarters of a mile wide. One central rock rises to a height of 1435 feet above the sea-level. Its northern face is almost perpendicular, while its east side is full of tremendous precipices. On the south it terminates in what is called Europa Point. The west side is less steep than the east, and between its base and the sea is the narrow, almost level span on which the town of Gibraltar is built. The fortress is considered impregnable to military assault. The regular garrison in time of peace numbers about 7000.

BIGGEST CAVERN is the Mammoth Cave, in Edmonson County, Kentucky. It is near Green River, about six miles from Cave City, and twenty-eight from Bowling Green. The cave consists of a succession of irregular chambers, some of which are large, situated on different levels. Some of these are traversed by the navigable branches of the subterranean Echo River. Blind fish are found in its waters.

LARGEST HANGING BELL IN THE WORLD is in a Buddhist monastery, near Canton, China. It is eighteen feet high and forty-five feet in circumference, and is of solid bronze. It is one of the eight great bells which were cast by command of the Emperor Yung-lo about A. D. 1400, and is said to have cost the lives of eight men, who were killed during the process of casting. The whole bell, both inside and out, is covered with an inscription in embossed Chinese characters about half an inch long, covering even the handle, the total number being 84,000. The characters tell a single story—one of the Chinese classics.

LARGEST STATIONERY ENGINE IN THE WORLD is at the famous zinc mines at Friedensville, Pa. It is known as the "President," and there is no pumping engine in the world that can be compared with the monster. The number of gallons of water raised every minute is 17,500. The driving wheels are thirty-five feet in diameter and weigh forty tons each. The sweep rod is forty feet long, the cylinder 110 inches in diameter, and a piston-rod eighteen inches in diameter, with a ten-foot stroke.

LARGEST GUN IN THE UNITED STATES is the 20-inch Rodman, smooth bore, at Fort Hamilton, New York Harbor. Its dimensions are as follows: Extreme length, 243⅝ inches; maximum diameter, 64 inches; minimum diameter, 34 inches; length of bore in calibers, 10.50 inches. The service charge is 200 pounds of powder, and the weight of the projectile is 2000 pounds. There is also a wrought iron lined rifled 12½ inch gun at Sandy Hook. Its weight is 89,350 pounds; extreme length, 262⅔ inches; maximum diameter, 55 inches; minimum diameter, 27.55 inches; length of the bore in calibers, 18.53 inches. The gun is used for experimental purposes in testing powder.

The Longest Tunnels in the World.

MOUNT ST. GOTHARD TUNNEL, Italy, is 48,840 feet long, or nearly ten miles long, and the longest in the world.

MOUNT CENIS TUNNEL, Italy, is 39,840 feet long, or about seven miles long.

HOOSAC TUNNEL, Massachusetts, is 25,080 feet long, or about four and one-half miles.

NOCHISTONGO TUNNEL is 21,659 feet long or about four miles.

SUTRO TUNNEL is 21,120 feet long, or four miles.

THAMES AND MEDWAY, England, is 11,880 feet long, or about two miles.



LARGEST PILLARS IN THE WORLD—RUINS OF KARNAK, EGYPT. 421

Largest Steam Hammer in the World.

The greatest steam hammer in the world, constructed at the Bethlehem Iron Company's works for the manufacture of armor plate, was designed after the hammer of Schneider & Co., of Le Crusot, France, which, next to this one, is the largest hammer in the world. It has a stroke of 125 tons, while the Schneider hammer is only capable of striking a 100-ton blow. The hammer is used for forging ingots into armor plates. These ingots are cast of metal weighing from 100 to 150 tons, and by this stupendous piece of mechanism are forged into the desired sizes by 125-ton blows.

The hammer stands in the centre of a very large building and over a year was spent in its construction. A pit 58 by 62 feet was dug for the foundation and on walls 30 feet high the anvil stands. To give the foundation a certain elasticity a layer of 20 steel slabs on top of Ohio white oak timbers was made and the surface was rendered perfectly smooth. It was of course entirely out of the question to cast in a single piece the iron required and the anvil was built by depositing on top of the steel slabs and their timbers 22 blocks of solid cast iron. The average weight of these blocks is 70 tons, and the entire weight of the mass of iron and steel forming the anvil and foundation is nearly 1800 tons.

The hammer itself is a majestic looking structure, superimposed over the cyclopean mass of iron, forming the anvil—huge, substantial and powerful, rising to a height of 90 feet.

Most Notable Bridges of the World.

BROOKLYN BRIDGE was commenced, under the direction of J. Roebling, in 1870, and completed in about thirteen years. It is 3475 feet long and 135 feet high. The cost of building was nearly $15,000,000.

CANTILEVER BRIDGE, over the Niagara, is built almost entirely of steel. Its length is 910 feet, the total weight is 3000 tons, and the cost was $900,000.

FIRST NIAGARA SUSPENSION BRIDGE was built by Roebling in 1852–53, at a cost of $400,000. It is 245 feet above water, 821 feet long, and the strength is estimated at 1200 tons.

BRIDGE AT HAVRE DE GRACE, over the Susquehanna, is 3271 feet long, and is divided into twelve wooden spans, resting on granite piers.

BRITANNIA BRIDGE crosses the Menai strait, Wales, at an elevation of 103 feet above high water. It is of wrought iron, 1511 feet long, and was finished in 1850. Cost, $3,008,000.

NEW LONDON BRIDGE is constructed of granite, from the designs of L. Rennier. It was commenced in 1824, and completed in about seven years, at a cost of $7,291,000.

OLD LONDON BRIDGE was the first stone bridge. It was commenced in 1176 and completed in 1209. Its founder, Peter of Colechurch, was buried in the crypt of the chapel erected on the centre pier.

COALBROOKDALE BRIDGE, England, is the first cast-iron bridge. It was built over the Severn in 1779.

BRIDGE AT BURTON, over the Trent, was formerly the longest bridge in England, being 1545 feet. It is now partly removed. Built in the twelfth century.

THE RIALTO, at Venice, is said to have been built from the designs of Michael Angelo. It is a single marble arch, 98½ feet long, and was completed in 1591.

BRIDGE OF SIGHS, at Venice, over which condemned prisoners were transported from the hall of judgment to the place of execution, was built in 1589.

BRIDGE OF THE HOLY TRINITY, at Florence, was built in 1569. It is 322 feet long, constructed of white marble, and stands unrivaled as a work of art.

COVERED BRIDGE AT PAVIA, over the Ticino, was built in the fourteenth century. The roof is held by 100 granite columns.

ST. LOUIS BRIDGE, over the Mississippi, is 1524 feet long, exclusive of approaches. There are three arched spans of cast steel, the centre arch being 520 feet, with a rise of 47½ feet; and the side spans 502 feet each, with a rise of 46 feet. The width on top, between rails, is 50 feet. The piers rest on the bedrock of the river, 136 feet below high water mark. Captain James B. Eads was the engineer.

RUSH STREET BRIDGE, Chicago, Ill., erected in 1884, at a cost of $132,000 is the largest general traffic drawbridge in the world. Its roadway will accomdate four teams abreast, and its footways are seven feet wide.

VICTORIA BRIDGE, Montreal, one of the most famous in the world, is nearly two miles in length.

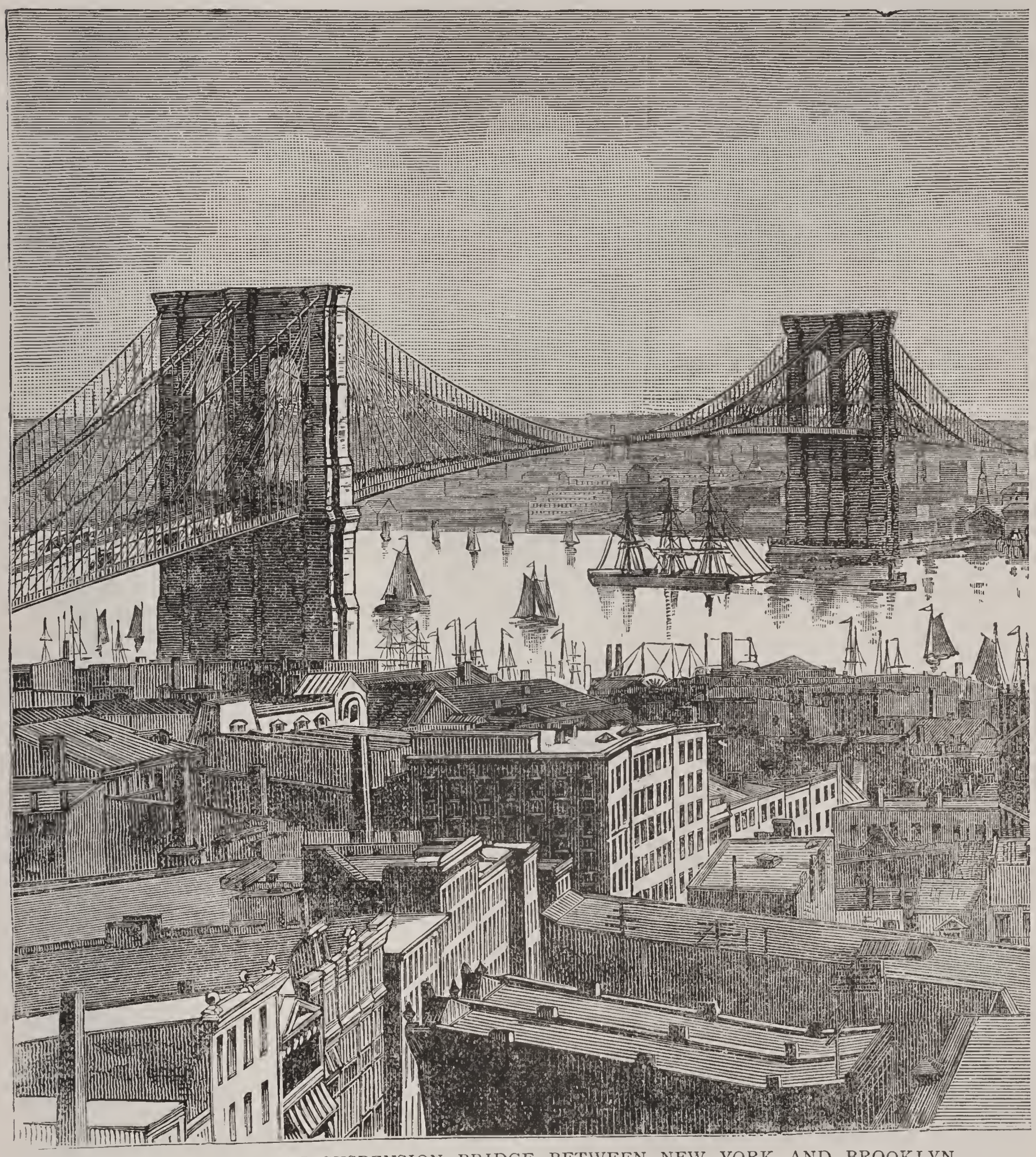
CLEVELAND (O.) VIADUCT is 3211 feet in length, 64 feet wide, 42 feet of which is roadway; the drawbridge is 332 feet in length, 46 feet wide, and is 68 feet above ordinary stage of water.

The Greatest City in the World.

London, England, is the greatest city the world ever saw. It covers within the fifteen miles radius of Charing Cross (Strand) 700 miles. It numbers within these boundaries 5,656,000 of inhabitants. It comprises over 2,000,000 foreigners from every quarter of the globe. It contains more Roman Catholics than Rome itself; more Jews than the

whole of Palestine; more Irish than Dublin; more Scotchmen than Edinburgh; more Welshmen than Cardiff; more country-raised persons than the counties of Devon, Warwickshire and Durham combined.

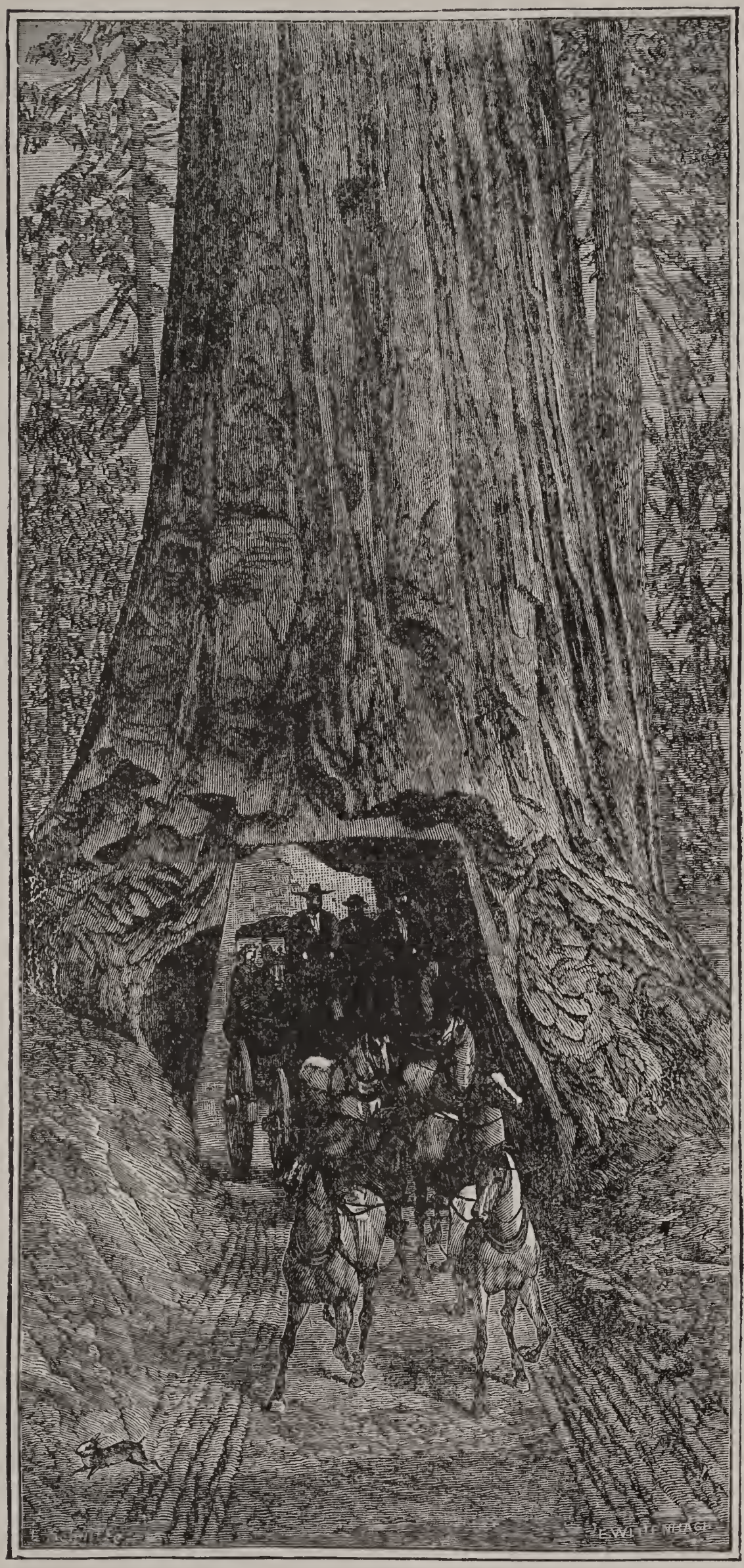
London has 49,000 persons added annually (by birth) to its population; has over 1000 ships and 10,000 sailors in its port every day; has as many beer shops and gin palaces as would, if placed side



THE GREAT SUSPENSION BRIDGE BETWEEN NEW YORK AND BROOKLYN.

Has a birth every five minutes, has a death in it every eight minutes; has seven accidents every day in its 8000 miles of streets; has on an average 40 miles of streets opened and 15,000 new houses built in every year.

by side, stretch from Charing Cross to Portsmouth, a distance of seventy-eight miles; has 38,000 drunkards annually brought before its magistrates; has seventy miles of open shops every Sunday; has influence with all parts of the world represented by



ONE OF THE BIG TREES OF CALIFORNIA.

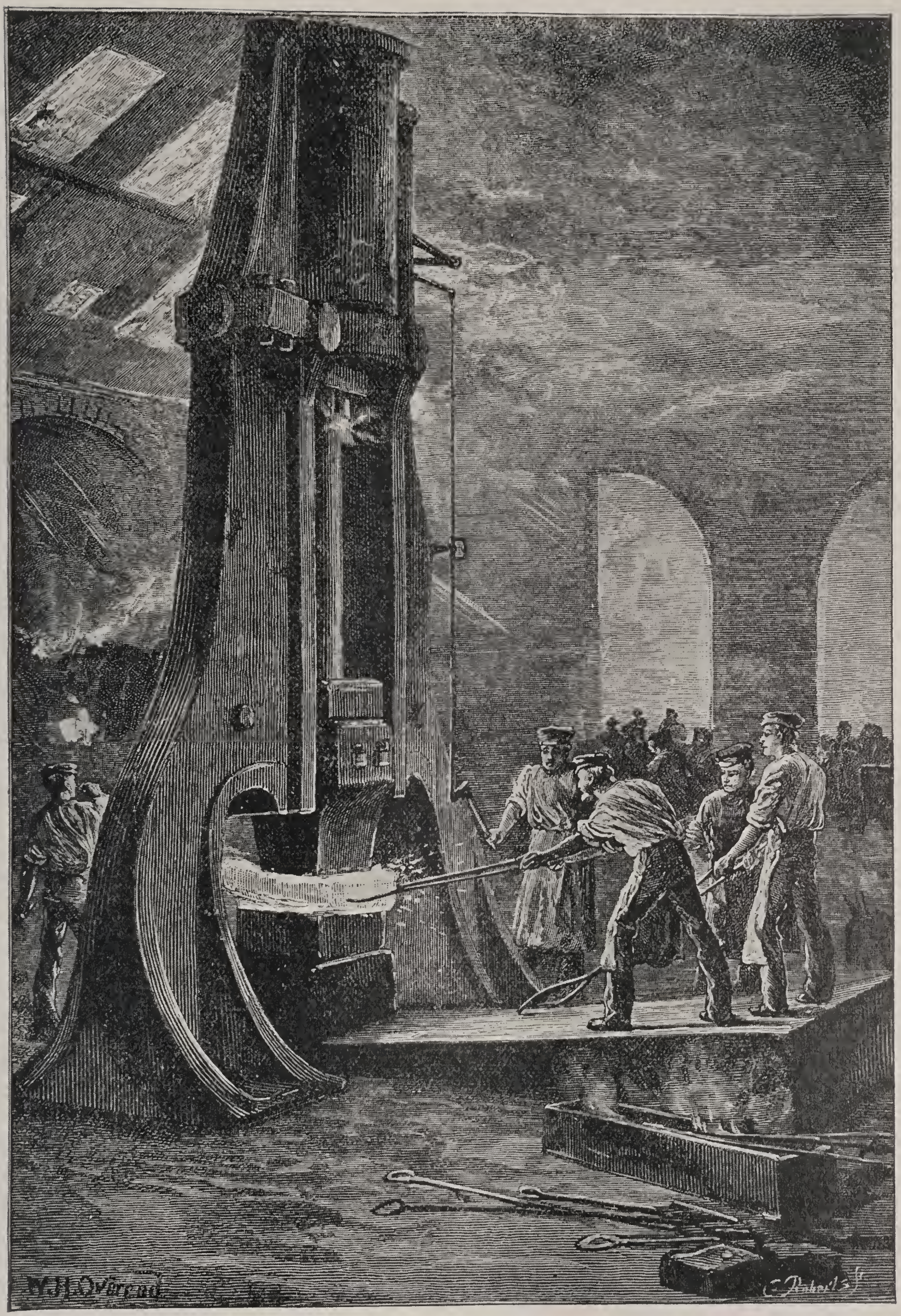
a yearly delivery in its postal districts of 298,000,000 of letters. Eight hundred and fifty trains pass Clapham junction every day, and the transportation (underground) railroad runs 1211 trains every day.

The London Omnibus Company have over 700 'busses, which carry 56,000,000 passengers annually. It is more dangerous to walk the streets of London than to travel by railroad or to cross the Atlantic from New York to Liverpool. In 1886, 130 persons were killed and 2000 injured by vehicles in the streets. There are in London 15,000 police, 15,000 cabmen, 15,000 persons connected with the post-office. The cost of gas for lighting London annually is $3,000,000. London has 400 daily and weekly newspapers. The ancient city of London was first founded by Brute, the Trojan, in the year of the world 2832, so that since the first building it is 3007 years old. The drainage system of London is superb, and the death rate very low.

The Largest Trees in the World.

The big trees of Calaveras and Mariposa Counties, in California, belong to the same genus as the common redwood. This giant of the Sierras is not a handsome tree, either when young or aged; the branches are short, the spray less graceful than the coast redwood, the leaves small and awl-shaped, but the cones are several times larger, and the wood is of a duller reddish hue. The forests were first seen by white men in the spring of 1852, when a hunter named Dowd conducted a party of miners to the locality where the big trees grew. In the several groves where they have been found, there are many trees from 275 to 335 feet high, and from 25 to 34 feet in diameter. The area of Mariposa Grove is two miles square, and it contains 427 of the monster trees.

The largest in the Calaveras Grove is "The Keystone State," and is 325 feet high, and its girth six feet from the ground is 45 feet. There are some in the Mariposa Grove which are not so high, but which have a greater circum-



THE GIANT STEAM HAMMER

ference. "The Grizzly Gian," for example, being 93 feet at the ground, and over 64, eleven feet above. Some dozen miles south of the Mariposa Grove is the Fresno Grove, which is said to contain about 600 trees, the largest 81 feet in circumference; while about fifty miles north of the Calaveras, in Placer county, a small grove has been discovered. Careful computations have been made of the ages of these trees, and some cautious scientists admit, in regard to one of them, that "its age cannot have exceeded 1300 years!"

The Largest Park in the World.

The Yellowstone National Park extends sixty-five miles north and south and fifty-five miles east and west, comprising 3575 square miles, and is 6000 feet or more above sea level. Yellowstone Lake, twenty miles by fifteen, has an altitude of 7788 feet. The mountain ranges which hem in the valleys on every side rise to the height of 10,000 to 12,000 feet, and are always covered with snow. This great park contains the most striking of all the mountains, gorges, falls, rivers and lakes in the whole Yellowstone region.

The springs on Gardiner's River cover an area of about one square mile, and three or four square miles thereabout are occupied by the remains of springs which have ceased to flow. The natural basins into which these springs flow are from four to six feet in diameter and from one to four feet in depth. The principal ones are located upon terraces midway up the sides of the mountain. The banks of the Yellowstone River abound with ravines and canyons, which are carved out of the heart of the mountains through the hardest rocks.

The most remarkable of these is the canyon of Tower Creek and Column Mountain. The latter, which extends along the eastern bank of the river for upward of two miles, is said to resemble the Giant's Causeway. The canyon of Tower Creek is about ten miles in length, and is so deep and gloomy that it is called "The Devil's Den." Where Tower Creek ends the Grand Canyon begins. It is twenty miles in length, impassable throughout, and inaccessible at the water's edge, except at a few points. Its rugged edges are from 200 to 500 yards apart, and its depth is so profound that no sound ever reaches the ear from the bottom.

The Grand Canyon contains a great multitude of hot springs of sulphur, sulphate of copper, alum, etc. In the number and magnitude of its hot springs and geysers, the Yellowstone Park surpasses all the rest of the world. There are probably fifty geysers that throw a column of water to the height of from 50 to 200 feet, and it is stated that there are not fewer than 5000 springs.

The temperature of the calcareous springs is from 160 to 170 degrees, while that of the others rises to 200 or more. The principal collections are the upper and lower geyser basins of the Madison River and the calcareous springs on Gardiner's River. The great falls are marvels to which adventurous travelers have gone only to return and report that they are parts of the wonders of this new American wonderland.

The Washington Monument.

The corner-stone was laid by President Polk, July 4, 1848, and December 6, 1884, the cap-stone was set in position. The foundations are 126½ feet square and 36 feet 8 inches deep. The base of the monument is 55 feet 1½ inches square, and the walls 15 feet ¼ inch thick. At the 500-foot mark, where the pyramidal top begins, the shaft is 34 feet 5½ inches square and the walls are 18 inches thick.

The monument is made of blocks of marble 2 feet thick, and it is said there are over 18,000 of them. The height above the ground is 555 feet. The pyramidal top terminates in an aluminum tip, which is 9 inches high and weighs 100 ounces. The mean pressure of the monument is 5 tons per square foot, and the total weight, foundation and all, is nearly 81,000 tons. The door at the base, facing the capitol, is 8 feet wide and 16 feet high, and enters a room 25 feet square.

An immense iron frame-work supports the machinery of the elevator, which is hoisted with steel wire ropes, 2 inches thick. At one side begin the stairs, of which there are 50 flights, containing 18 steps each. Five hundred and twenty feet from the base there are 8 windows, 18x24 inches, 2 on each face. The area at the base of the pyramidal top is 1187¼ feet, space enough for a six-room house, each room to be 12x16 feet. The Cologne Cathedral is 511 feet high; the pyramid of Cheops, 486; Strasburg Cathedral, 474; St. Peter's at Rome, 448; the Capitol at Washington, 306, and Bunker Hill Monument, 221 feet. The Washington Monument, therefore, is the highest structure in the world, except the temporary Eiffel Tower. The total cost was not far from $1,500,000.

Height of Principal Monuments and Buildings.

Places.	Names.	Feet.
Paris	Eiffel	1000
Wash., D. C	Washington Monument	555
Philadelphia	Public Buildings	545
Egypt	Pyramid of Cheops	486
Belgium	Antwerp Cathedral	476
France	Strasburg Cathedral	474
Egypt	Pyramid of Cephrenes	456
Rome	St. Peter's Church	448

Places.	Names.	Feet.
Germany	St. Martin's Church at Landshut.	411
England	Salisbury Cathedral	400
England	St. Paul's Church, London	365
Italy	Cathedral at Florence	386
Lombardy	Cathedral at Cremona	397
Germany	Church at Fribourg	386
Spain	Cathedral of Seville	360
Lombardy	Cathedral of Milan	355
Holland	Cathedral of Utrecht	356
New York	Trinity Church	284
China	Porcelain Tower, Nankin	260
Paris	Church of Notre Dame	224
Massachusetts.	Bunker Hill Monument	221
Italy	Leaning Tower of Pisa	179
Baltimore	Washington Monument	175
Paris	Monument, Place Vendome	153
Italy	Trojan's Pillar, Rome	151
Paris	Obelisk of Luxor	110

Capacity of the Largest Churches and Hall.

St. Peter's Cathedral	Rome	54,000
Cathedral of Milan	Milan	37,000
St. Paul's Church	Rome	32,000
St. Paul's Cathedral	London	25,000
Church of St. Petronio.	Bologna	24,000
Cathedral of Florence	Florence	24,000
Cathedral of Antwerp	Antwerp	24,000
Mosque of St. Sophia	Constantinople	23,000
St. John's Lateran	Rome	22,000
Cathedral of Notre Dame	Paris	21,000
Cathedral of Pisa	Pisa	13,000
Church of St. Stephen.	Vienna	12,000
Church of St. Dominic.	Bologna	12,000
Church of St. Peter	Bologna	11,400
Cathedral of Vienna	Vienna	11,000
St. Peter's Cathedral	Montreal	10,000
Auditorium	Chicago	8,000

The Highest Mountains.

	Feet.
Kunchainyunga, Himalayas	28,170
Sorata, Andes	25,380
Illimani, Bolivia	21,780
Chimborazo, Ecuador	21,444
Hindoo-Koosh, Afghanistan	20,600
Cotopaxi, Ecuador	19,408
Antisana, Ecuador	19,150
St. Elias, British America	18,000
Popocatapetl, Mexico	17,735
Mt. Roa, Hawaii	16,000
Mt. Brown	15,900
Mont Blac	15,776
Mowna Roas, Owhyhee	15,700
Mt. Rosa, Alps, Sardinia	15,550
Pinchinca, Ecuador	15,200
Mt. Whitney, California	15,000
Mt. Fairweather, Alaska	14,796
Mt. Shasta, California	14,450
Pike's Peak, Colorado	14,320
Mt. Ophir, Sumatra	13,800
Fremont's Peak, Wyoming	13,570
Long's Peak, California	13,400
Mt. Ranier, Washington	13,000
Mt. Ararat, Armenia	12,700
Peak of Teneriffe, Canaries	12,236
Miltsin, Morocco	12,000
Mt. Hood, Oregon	11,570
Simplon, Alps	11,542
Mt. Lebanon, Syria	11,000
Mt. Perdu, France	10,950
Mt. St. Helen's, Oregon	10,158
Mt. Etna, Sicily	10,050
Olympus, Greece	9,754
St. Gothard, Alps	9,080
Mt. Sinai, Arabia	8,000
Pindus, Greece	7,677
Black Mountain, New Caledonia	6,467
Mt. Washington, New Hampshire	6,234
Mt. Marcy, New York	5,467
Mt. Hecla, Iceland	5,000
Ben Nevis, Scotland	4,400
Mansfield, Vermont	4,280
Peaks of Otter, Virginia	4,260
Ben Lawers, Scotland	4,030
Parnassus, Greece	3,850
Vesuvius, Naples	3,932
Ben Lomond, Scotland	3,280
Mt. Carmel	2,000

Height of Twenty-four of the Loftiest Volcanoes of the World.

Name of Volcano.	Height in feet.	Where Located.
Sahama	23,000	Peru.
Llullaillac	21,000	Chili.
Arequipa	20,500	Peru.
Cayambi	19,813	Equador.
Cotopaxi	19,500	Peru.
Antisana	19,200	Ecuador.
San Jose	18,150	Chili.
Mt. St. Elias	17,900	Alaska.
Popocatepetl	17,884	Mexico.
Orizaba	17,370	Mexico.
Altar	17,126	Ecuador.
Sangai	17,120	Ecuador.
Klintcheoskaia	16,512	Kamtschatka.
Iztacihuate	15,700	Mexico.
Toluco	15,500	Mexico.
Shasta	14,400	United States.

Name of Volcano.	Height in feet.	Where Located.
Fujiyama	14,000	Japan.
Mauna Kea	13,953	Sandwich Islands.
Mauna Loa	13,760	Sandwich Islands.
Teneriffe	12,236	Canary Islands.
Mt. St. Helens	12,000	United States.
Mt. Hood	11,225	United States.
Peak of Tahiti	10,895	Friendly Islands.
Mt. Etna	10,874	Sicily.

Three of the best known volcanoes of the world, Vesuvius, 3978 feet; Hecla, 3970 feet, and Stromboli, 3000 feet, are of much less elevation than many others altogether unfamiliar.

Greatest Known Depth of the Ocean.

The greatest depth which has been ascertained by sounding is five miles and a quarter (25,720 feet, or 4620 fathoms), not quite equal to the height of the highest known mountain. The average depth between 60 degrees north and 60 degrees south is nearly three miles.

Deepest Lake in the World.

In the Cascade Mountains, about seventy-five miles northeast of Jacksonville, Ore., the seeker for the curious will find the Great Sunken Lake, the deepest lake in the world. This lake rivals the famous valley of Sinbad the Sailor. It is said to average 2000 feet down to the water on all its sides. The depth of the water is unknown, and its surface is as smooth and unruffled as a mammoth sheet of glass, it being so far below the mountain rim as to be unaffected by the strongest winds. It is about 15 miles in length and about 4½ wide.

For unknown ages it has lain still, silent and mysterious in the bosom of the great mountain range, like a gigantic trench scooped out by the hands of a giant genie. A hunting and surveying party recently left Jacksonville with the intention of ascertaining the exact depth of this mysterious body of water, and to find out, if possible, whether or not fish are to be found within its ghostly precincts.

The Longest Rivers in the World.

Name.	Miles.
EUROPE.	
Volga, Russia	2,500
Danube	1,800
Rhine	840
Vistula	700
ASIA.	
Yeneisy and Selenga	3,580
Kiang	3,290
Hoang Ho	3,040
Amoor	2,500
Euphrates	1,900
Ganges	1,850
Tigris	1,160
AFRICA.	
Nile	3,240
Niger	2,400
Gambia	1,000
SOUTH AMERICA.	
Amazon and Beni	4,000
Platte	2,700
Rio Madeira	2,300
Rio Negro	1,650
Orinoco	1,600
Uruguay	1,100
Magdalena	1,000
NORTH AMERICA.	
Mississippi and Missouri	4,300
Mackenzie	2,800
Rio Bravo	2,300
Arkansas	2,070
Red River	1,520
Ohio and Allegheny	1,480
St. Lawrence	1,450

Size of Lakes, Seas and Oceans.

Lakes.	Miles Long.	Miles Wide.
Superior	380	120
Michigan	330	60
Ontario	180	40
Champlain	123	12
Erie	270	50
Huron	250	90
Cayuga	36	4
George	36	3
Baikal	360	35
Great Slave	300	45
Winnipeg	240	40
Athabasca	200	20
Maracaybo	150	60
Great Bear	150	40
Ladoga	125	75
Constance	45	10
Geneva	50	10
Lake of the Woods	70	25

Seas.	Miles Long.
Mediterranean	2,000
Carribbean	1,800
China	1,700
Red	1,400
Japan	1,000
Black	932

Seas.	Miles Long.
Caspian	640
Baltic	600
Okhotsk	600
White	450
Aral	250

Oceans.	Miles Square.
Pacific	80,000,000
Atlantic	40,000,000
Indian	20,000,000
Southern	10,000,000
Arctic	5,000,000

The Greatest Catastrophes of History.

In China, where some of the greatest rivers in the world flow between artificial banks at an elevation considerably above the surrounding country, there have been overflows that caused the destruction of hundreds of thousands of lives. There have been similar disasters in India, where, as in China, the rivers had made beds for themselves with alluvial banks higher than the plains across which they flowed. But aside from these the colossal calamity at Johnstown, Pa., in June, 1889, and through the fated Conemaugh Valley, leads all disasters in this country in the appalling muster roll of the dead, numbering over 6000. In past centuries the greatest loss of life has been by earthquake, and the following list embraces the loss in historic calamities :

Year.	Place.	Persons Killed.
1137	Sicily	15,000
1158	Syria	20,000
1268	Cilicia	50,000
1456	Naples	40,000
1531	Lisbon	40,000
1626	Naples	70,000
1667	Schamaki	80,000
1692	Jamaica	4,000
1693	Sicily	100,000
1703	Aquila, Italy	4,000
1703	Yeddo, Japan	200,000
1706	The Abruzzi	15,000
1716	Algiers	20,000
1726	Palermo	6,000
1731	Pekin	100,000
1746	Lima and Calloa	18,000
1754	Grand Cairo	40,000
1755	Kashan, Persia	40,000
1759	Syria	20,000
1784	Ezinghian, Asia Minor	5,000
1792	Country between Santa Fé and Panama	40,000
1805	Naples	6,500
1822	Aleppo	20,000
1829	Murcia	5,000
1830	Canton	6,000
1842	CapeHaytien	4,000
1857	Calabria	10,000
1859	Quito	5,000
1860	Mendozi, South America	7,000
1868	Towns in Peru and Ecuador	25,000
1875	San Jose de Cucuta, Colombia	14,000
1881	Scio	4,000
1886	Charleston	96

One instance shows how the human race has been depleted from this cause. In the Kingdom of Naples, from 1783 to 1857, a period of 75 years, the loss of life by earthquakes was 111,000 or at the rate of more than 1500 a year, out of a population of 6,000,000. The country surrounding the Mediterranean and the intertropical area from which the American Cordilleras spring, may be regarded as the centers of earthquake activity, though some of the greatest earthquakes of all time have occurred in Eastern Asia and the East Indies.

Floods and Freshets

The list of losses by great floods and freshets in history is as follows :

Year.	Place.	Lives Lost.	Year.	Place.	Lives Lost.
1871	China	3,000	1879	Marcia, Spain	1,000
1874	Mill River, Mass	150	1887	Yellow River, China	100,000
1878	Egypt, the Nile	250	1889	Johnstown, Pa	6,111

Greatest Conflagrations of the Present Century.

But the greatest destruction of life and property by conflagrations, of which the world has anything like accurate records, must be looked for within the current century. Of these the following is a partial list of instances in which the loss of property amounted to $3,000,000 and upward :

Dates.	Cities.	Property Destroyed
1802	Liverpool	$ 5,000,000
1805	St. Thomas	30,000,000
1812	Moscow, burned five days ; 30,800 houses destroyed	150,000,000
1820	Savannah	4,000,000
1822	Canton, nearly destroyed	
1835	New York ("Great Fire")	15,000,000
1837	St. John, N. B.	5,000,000
1838	Charleston, 1158 buildings	3,000,000
1842	Hamburg, 4219 buildings, 100 lives lost	35,000,000
1845	New York, 35 persons killed	7,000,000
1845	Pittsburgh, 1100 buildings	10,000,000
1845	Quebec, May 28, 1650 dwellings	3,750,000
1846	St. Johns, Newfoundland	5.000,000
1848	Constantinople, 2500 buildings	15,000,000
1848	Albany, N. Y., 600 houses	3,000,000
1849	St. Louis.	3,000,000
1851	St. Louis, 2500 buildings	11,000,000
1751	St. Louis, 500 buildings	3,000,000
1851	San Prancisco, May 4 and 5, many lives lost	10,000,000
1851	San Francisco, June	3,000,000
1852	Montreal, 1200 buildings	5,000,000
1862	St. Petersburg	5,000,000

Dates.	Cities.	Property Destroyed.
1862	Troy, N. Y., nearly destroyed.....	
1865	Constantinople, 2800 buildings burned.	
1866	Yokohama, nearly destroyed....	
1865	Carlstadt, Sweden, all consumed but Bishop's residence, hospital, and jail; 10 lives lost.....	
1866	Portland, Me., half the city.....	$11,000,000
1866	Quebec, 2500 dwellings and 17 churches.....	
1870	Constantinople, Pera suburb.....	26,000,000
1871	Chicago, 250 lives lost, 17,430 buildings burned, on 2124 acres..	192,000,000
1871	Paris, fired by the Commune.....	160,000,000
1872	Boston.....	75,000,000
1877	Pittsburgh, caused by riot.....	3,260,000
1877	St. Johns, N. B., 1650 dwellings, 18 lives lost.....	12,500,000
1889	Seattle, Wash.....	20,000,000

From the above it appears that the greatest fires on record, reckoned by destruction of property, are :

Chicago fire, of Oct. 8 and 9, 1871.....	$192,000,000
Paris fires, of May, 1871.....	160,000,000
Moscow fire, of Sept. 14–19, 1812.....	150,000,000
Boston fire, Nov. 9–10, 1872.....	75,000,000
Hamburg fire, May 5–7, 1842.....	35,000,000

Taking into account, with the fires of Paris and Chicago, the great Wisconsin and Michigan forest fires of 1871, in which it is estimated that 1000 human beings perished and property to the amount of over $3,000,000 was consumed, it is plain that in the annals of conflagrations that year stands forth in gloomy pre-eminence.

Chicago's Great Fires.

There were 2100 acres of land burned over, nearly all of which area was thickly covered with buildings. There were nearly 18,000 buildings destroyed, of which about 2400 were stores and factories; and there were but few short of 100,000 people rendered homeless by the calamity. The extreme length of the burnt district was 3¾ miles, and its greatest width a little over a mile. The fire of July, 1874, originated on South Clark street, between Taylor and Twelfth, and spread northeast to Michigan avenue. It was estimated that in this fire about fifty acres were burned over, many of the new buildings which had been erected after the great fire of 1871 having been leveled.

The loss of property in the great fire of 1871 was $192,000,000, after allowing $4,000,000 for salvage on foundations of buildings. This estimate does not include the shrinkage of real estate values, or the large loss to mercantile interests by the interruption of trade consequent upon the destruction of stocks and business facilities. Mr. Colbert estimated the grand aggregate not very much below $290,000,000.

The loss occasioned by the fire of 1874 was estimated as follows : The net loss to insurance companies was officially placed at $2,244,970, or 40 per cent. of the entire loss, making an estimated total loss of $5,612,425. The cash contributions to Chicago within three months after the fire amounted to $4,200,000.

Most Noted Facts in Turf History.

The richest stake ever run in America was the Futurity stake of 1890, run at Sheephead Bay, L. I., August 30, and won by August Belmont's ch. c. Potomac (2) by St. Blaise, dam Susquehanna, by Leamington. The value of the stake was $77,700, of which $68,450 went to the winner, and $4500 to the second horse, Masher, b. c., by Ill Used also owned by Mr. Belmont, who in addition received $2500 for breeding first and second, making his winnings $75,450. Stathmeath, the third horse, received $2250.

The Lancashire plate run at the Manchester, Eng., September meeting of 1889, and won by the Duke of Portland's b. c. Donovan, was worth nearly $80,000 to the winner.

Largest amount ever won by an American two-year-old, $78,650, Potomac, b. c., by St. Blaise, 1890.

The greatest winning three-year-old was Hanover, by Hindoo. He won twenty races and $89,827.

Miss Woodford, br. m., foaled 1880, by imported Billet, dam Fanny Jane, by Neil Robinson, won more money than any animal that ever ran on the American turf, winning in five years forty-eight races, worth $118,970.

In 1886 the stable of Dwyer Brothers won $208,549.16 in purses and stakes—more money than was ever won by any other single racing establishment in America.

The greatest sale of thoroughbreds ever had in this country was that of P. Lorillard in 1886, at which twenty-seven head sold for $149,050, the highest price being $29,000, the lowest $300.

King Thomas, by King Ban, was the highest priced yearling ever sold at auction, L. O. Appleby paying $38,000 for him at the Haggin sale in New York, June 25, 1888. The following day Mr. Appleby sold the colt to Senator Hearst, of California, for $40,000.

Highest price ever paid for a horse, $105,000, for Axtell, br. s., record, 2.12, three years old, by William L. (son of George Wilkes), dam Lou, by Mam-

brino Boy. Purchased from C. W. Williams, of Independence, Iowa, by John W. Conley, of Chicago, and others.

Dimensions of Bartholdi's Statue of Liberty.

The figure of this statue, which is made of repousse, or hammered work—that is, thin sheets of copper beaten into shape and fastened about an iron skeleton—is 110½ feet high and weighs 100,000 pounds. The uplifted torch, however, is raised 26 feet, and adding to this the pedestal, the tip of the torch is raised 220 feet from the ground. The pedestal is of stone, 82 feet high. Some idea of the enormous proportions of the statue may be given from the fact that the forefinger is 8 feet long, and 4 feet in circumference at the second joint. The head is 14 feet high and 40 persons can stand in it.

The Dimensions of the Great Wall of China, and of What it is Built.

It runs from a point on the Gulf of Liantung, an arm of the Gulf of Pechili in Northeastern China, westerly to the Yellow River, thence makes a great bend to the south for nearly 100 miles, and then runs to the northwest for several hundred miles to the Desert of Gobi. Its length is 1250 miles. For the most of this distance it runs through a mountainous country, keeping on the ridges, and winding over many of the highest peaks. In some places it is only a formidable rampart, but most of the way it is composed of lofty walls of masonry and concrete, or impacted lime and clay, 25 feet in thickness, and 25 feet in height.

The top of this wall is paved for hundreds of miles, and crowned with crenelated battlements, and towers 30 to 40 feet high. In numerous places the wall climbs such steep declivities that its top ascends from height to height in flights of granite steps. An army could march on the top of the wall for weeks and even months, moving in some places ten men abreast.

Most Northern Point Reached by Arctic Explorers.

The following table shows the furthest points of north latitude reached by Arctic explorers up to and including the Greely expedition:

Year.	Explorers.	North Latitudes.		
1607	Hudson	80d	23m	00s
1773	Phipps (Lord Musgrove)	80d	48m	00s
1806	Scoresby	81d	12m	42s
1827	Parry	82d	45m	30s
1874	Meyer (on land)	82d	09m	00s
1875	Markham (Nare's expedition)	83d	20m	26s
1876	Payer	83d	07m	00s
1884	Lockwood (Greely's party)	83d	24m	00s

The distance from the farthest point of polar discovery to the pole itself is 6 deg. 46 min., or in round numbers, 460 miles. It is 30 miles less than from Chicago to Omaha, by the lines of the Chicago, Milwaukee and St. Paul railway, over which the traveller rides in 24 hours. But this polar radius, though only 460 miles in extent, is covered by ice gorges and precipices of incredible difficulty; and frost is so severe that no instrument of human invention can measure its intensity, and it blisters the skin like extreme heat.

The greatest progress that has ever been made across these wildernesses of storm, of fury and desolation, was at the rate of five or six miles in a day, the explorers often necessarily resting as many days as they had before travelled miles in a single day, debarred by the obstacles that they had encountered.

The Coal Area of the World.

The coal area of the world is distributed as follows:

	Sq. Miles.		Sq. Miles.
United States	192,000	Germany	1,800
British America	18,000	Belgium	518
Great Britain	12,000	Rest of Europe	100,000
Spain	4,000	China	2,000
France	2,000	Japan	5,000

Railroad Facts.

The cost of railroads in the United States has been $9,000,000,000.

One million persons are employed by the railroads of the United States.

The cost of a high-class eight-wheel passenger locomotive is about $8500.

The cost of a palace sleeping-car is $15,000, or if "vestibuled," $17,000.

The average cost of constructing a mile of railroad in the United States at the present time is about $30,000.

The average daily earning of an American locomotive is about $100.

The "consolidation" locomotive weighs about 50 tons, and is able to draw on a level over 2400 tons.

The longest mileage operated by a single system is that of the Atchison, Topeka and Santa Fe—about 8000 miles.

The line of railroad which extends farthest east and west is the Canadian Pacific, running from Quebec to the Pacific Ocean.

There are 60 miles of snow-sheds on the Central Pacific Railroad.

The highest railroad in the United States is the Denver and Rio Grande at Marshall Pass—10,852 feet.



THE BARTHOLDI STATUE OF LIBERTY. 431

The longest American railroad tunnel is the Hoosac Tunnel on the Fitchburg Railroad—4½ miles. (The St. Gothard Tunnel in Europe is over 9 miles in length.)

There are 208,749 railroad bridges in the United States, spanning 3213 miles.

The longest railroad span in the United States is the Cantilever span in the Poughkeepsie bridge over the Hudson River—548 feet.

The highest railroad bridge in the United States is the Kinzua Viaduct on the Erie road—305 feet high.

The Manhattan Elevated Railroad of New York carries the largest number of passengers of any American road, over 200,000,000.

A steel rail lasts, with average wear, about eighteen years.

The Fastest Locomotive Ever Built.

The largest and fastest passenger engine ever built, was by the Rhode Island Locomotive Works, for the New York, Providence and Boston Railroad Company. The main driving wheels are six feet in diameter, and set but seven feet six inches apart. This arrangement makes her run easily on curves. The cylinders are eighteen inches in diameter, with twenty-four-inch stroke. The boiler is fifty-four inches in diameter at the smoke-stack, with a wagon top. It extends to the very end of the cab, and necessitates the elevation of the engineer's seat to a height far above the fire door. The fire requires three tons of coal before the engine pulls out of the round-house to make her trips, and four tons will be carried on the tender. The tank of the latter will hold 4000 gallons of water, and the total weight of the engine proper is 93,000 to 95,000 pounds.

She looks to be enormously high as she sets up well in the air, and her short smoke-stack adds to her apparent height. Everything about her is steel. There is not a particle of brass or bright work about her. She makes the run from Providence to Groton, Conn., a distance of 62.5 miles, including a dead stop at Mystic drawbridge, as required by the statutes of Connecticut, in just 62.5 minutes, pulling at the same time eight cars, four of which are Pullman's.

One Railroad in Palestine.

There is but one railway within the province of the Jerusalem consulate. This connects Jerusalem with the seaport, Jaffa, and it is 53 miles long. Its simple Oriental name is Chemin de Fer Ottoman de Jaffa a Jerusalem. It is a French corporation, but is practically controlled by the Turkish government.

The line is in fair condition, but the accommodations for passengers are very bad, and would not be tolerated by the traveling public of Europe or the United States. It is difficult to keep the line in good condition, owing to the heavy grades and short curves among the mountains. In the distance of 53 miles the ascent is nearly 2500 feet, most of which is made during the last half of the distance. The road is single track and narrow gauge. The daily service consists of one passenger and one freight train each way. The first-class fare between the termini is $3, and a round-trip ticket is sold for $4.

There are numerous railway lines in South Africa, the railroad-building industry having in recent years assumed very extensive proportions. Owing to the soft nature of the soil and the frequency of the rains, most of the roadbeds are in a state of chronic instability. There is regular railway communication between Pretoria and Cape Town, a distance of 1040 miles. The first-class passenger fare is 6 cents a mile.

The Great Siberian Railway—a through line across Siberia 4715 miles long—is now under construction in three sections. This is one of the biggest railway engineering enterprises ever undertaken, involving, as it does, the tunneling of great mountains and the building of enormous viaducts and bridges. The Cheliabinsk-Omsk line is fast nearing completion. The Middle Siberian section, the construction of which was begun in 1893, is now well under way, and it is hoped that it will be finished very soon. The main trunk of the great line is under contract to be completed not later than 1900.

To Sweden is given the distinction of owning more railway mileage per capita than any other country in Europe, and a Swedish road enjoys the further distinction of being the only railway in the world that enters the polar circle.

The Seven Wonders of the World.

The "pyramids" first, which in Egypt were laid;
Next "Babylon's garden," for Amytis made;
Then "Mausolo's tomb" of affection and guilt;
Fourth, the "temple of Dian," in Ephesus built;
The "colossus of Rhodes," cast in brass, to the sun;
Sixth, "Jupiter's statue," by Phidias done;
The "pharos of Egypt" comes last, we are told,
Or the "palace of Cyrus," cemented with gold.

The Wonders of the New World.

The group of natural objects that have been classed as the seven wonders of the new world are, Niagara Falls, Yellowstone Park, the Mammoth Cave, the Canyons and Garden of Gods, Colorado; the Giant Trees, California; the Natural Bridge, Virginia, and the Yosemite Valley.

DATES OF FIRST OCCURRENCES

AFFIRMATION of the Quakers first accepted as an oath, 1702.

AIR-GUNS invented 1646; for throwing shells, 1886.

AMPHITHEATRE in Rome built A. D. 69.

AMPHYCTIONIC COUNCIL or General Assembly of Greece established B. C. 1497. This is the first instance on record of a free representation of independent states meeting to deliberate and settle their concerns by force of reason in place of arms.

ARITHMETIC by the Arabian figures introduced into Europe by the Saracens of Spain in the ninth century of the Christian era.

ASSASSINATION of Lincoln, April 14, 1865.

BAFFIN'S BAY, separating Greenland from North America, discovered by Captain Baffin in 1662.

BALLOONS said to have been invented by Gusmac, a Jesuit, 1729, but probably invented much earlier, and first used in France by Montgolfier, who ascended in one November 23, 1782.

BANKS in the United States commenced in the early part of the Revolutionary War. The first by a number of gentlemen in Philadelphia, June 17, 1780, with a capital of $839,160; instituted for the purpose of supplying the American army with provisions.

BAROMETERS invented 1626.

BAYONETS invented at Bayonne, in France, 1670.

BLOOD, circulation of, through the lungs, first made public by Michael Servetus, a French physician, in 1553.

BOOKS in the present form were invented by Attalus, King of Bergumus, 887; the first supposed to be written in Job's time.

BREAD first made with yeast by the English, 1650.

BRICKS first used in England by the Romans—the size ordered by Charles I., 1625.

BURNING-GLASS and common mirrors date back to 1680.

CABLE, first Atlantic, operated 1858.

CANALS are of very ancient date, the first of which we have any record being that in Egypt between the Nile and Red Sea.

CARDS invented in France; first used for amusement by Charles VI., 1380.

CARRIAGES first introduced into Vienna 1515, into London 1580.

CHESS, the game of, invented B. C. 608.

CHINA, first voyage to, from the United States, 1784.

CHINA, PORCELAIN, first spoken of in history 1591.

CHLOROFORM was discovered in America and Germany, 1831. In 1847 it was brought into prominent notice as an anæsthetic by Sir James Simpson, of Edinburgh.

COLLEGE, Harvard is the oldest in the United States, established 1638.

COTTON first raised in Virginia 1621, first exported 1741.

CHRISTMAS day first observed as a festival, 98.

CIRCUMNAVIGATORS of the globe; the first was Magellan, or rather by his fleet, as he was himself slain on the voyage, 1522.

CLOCKS, called water clocks, first used in Rome, B. C. 158.

CLOTH, coarse woolen, first made at Kendal, 1390.

COAL discovered near New Castle, Eng., 1234.

COFFEE first brought into England, 1644.

COIN, silver, coined at Rome, B. C. 269.

COLLEGES as places of public instruction, in which academical degrees were granted, first established at Paris, 1215.

COMMERCE first mentioned in the book of Genesis, when Joseph's brethren sold him to a caravan of Ishmaelites.

COMPASS in use in Europe as early as 1180; variation first observed by Columbus and his companions, 1492.

CONGRESS, Continental first met in Philadelphia, September 5, 1774.

COPPER MINES found in New York, 1722.

COUNCILS. The first Nicene, when 328 fathers attended against Arius, 325; at Nice, when Pope Adrian presided and 350 fathers attended, 787.

CHRISTIANITY was propagated in Spain in 36; in Britain, 60; or, as others say, in the 5th century; in Franconia and Flanders, in the 7th century; in Lombardy, Thuringia and Hesse, in the 8th century; in Sweden, Denmark, Poland and Russia, in the 9th century; in Hungary and Sclavonia, in the 10th century; in Vandalia and Prussia, in the 11th century; in Pomerania and Norway, in the 12th century; in Livonia, Lithuania and part of Tartary, in the 13th century; in Sclavonia, part of Turkey, and the Canary Isles, in the 14th century; in Africa, at Guinea, Angola, and Congo, in the 15th century; made great progress in Prussia, both the Indies and in China, by the Protestant faith, in the 16th century; reinstated in Greece, &c., &c., in the 17th century.

DELFT EARTHENWARE first made at Faenza, 1450.

DISTILLATION of spirituous liquors began in the 12th century; in Ireland, 1590.

ELECTRICITY, first idea of, given by two globes of brimstone, 1467; electric spark discovered at Leyden, 1746; first known it would fire spirits, 1756.

EMANCIPATION PROCLAMATION, by President Lincoln, January 1, 1863.

ENGRAVING on metal plates known in Europe, B. C. 504; on wood, invented in Flanders, 1423; on steel, became common about 1830; lithographic, invented by Senefelder, a German, about 1796.

ENVELOPES were first used in 1839.

ETCHING on copper, with aqua fortis, invented 1512.

FIRE ENGINE, to force water, invented 1663.

FLAG, American, first used at Cambridge, Mass., by Washington, January 1, 1776. Legally established by Congress, June 14, 1777.

GAS, use of, introduced into London for lighting shops and streets, 1814; first into the United States, at Baltimore, 1821.

GILDING with leaf gold invented by Margaritone, 1273.

GYPSIES quitted Egypt, when attacked by the Turks, in 1515, and wandered over all Europe.

GLASS, the art of making it, known to the Romans at least before 79; known to the Chinese about 200; introduced into England by Benedict, a monk, 674; glass windows began to be used in private houses in England, 1180; glass first made in England into bottles and vessels, 1757; the first plate glass for looking glasses and coach windows, made at Lambeth, 1673; in Lancashire, 1773; window glass first made in England, 1557.

GOLD was first discovered in California, in 1848.

GRIST MILLS invented in Ireland, 214.

GUNPOWDER invented, 1330; first made in England, 1418.

HABEAS CORPUS ACT in England passed, 1641; attempt made in the Senate of the United States to suspend it, but rejected by the House of Representatives, 1806.

HACKNEY COACHES first used, 20 in number, in London, 1625.

HAIR POWDER in use in England, 1590; a guinea per year tax on those who wear it, 1795.

HANDKERCHIEFS first manufactured at Paisley in Scotland, 1748, when $80,000 worth were made.

HATS invented at Paris, 1404; first made in London, 1510.

HERALDRY had its rise about the year 1100.

HOUR GLASSES were invented in Alexandria, 240, and introduced at Rome 158 years B. C.

HUDSON'S BAY discovered by Captain Hudson, 1607.

INDIGO first produced in Carolina, 1747.

INFALLIBILITY. The dogma of Pagal Infallibility promulgated in 1870.

INOCULATION first tried on criminals, 1741; vacine discovered by Dr. Jenner, 1799.

INSURANCE on shipping began in England, 1560.

IRON discovered by the burning of Mt. Ida, 1406 B. C.; first cast in England, at Backstead, Sussex, 1544; first discovered in America in Virginia, 1715.

IRON STEAMSHIP, the first was built in 1830.

JUPITER'S SATELLITES discovered by Jansen, 1590.

JURIES first instituted by Ethelred II., King of England, 979; the plaintiff and defendant, in those times, used to feed them; whence the common law of denying sustenance to the jury after hearing evidence.

KEROSENE first used for illuminating in 1826.

KINGDOM, origin of, by Nimrod at Babylon, 2233 years B. C.

KING'S EVIL supposed to be cured by the touch of the Kings of England, the first king being Edward the Confessor, 1058. It was dropped by George I.

KISSING the Pope's foot first practiced, 709.

KNITTING STOCKINGS invented in Spain about 1550.

KNIVES first made in England, 1563.

LAMP for preventing explosion by fire-damp in coal mines, invented by Sir Humphrey Davy, 1815.

LANCASTRIAN SCHOOLS of education established in most of the principal towns of England, 1810.

LAWNS AND THREAD GAUZE were manufactured at Paisley in 1784.

LETTERS invented by Memnon, the Egyptian, 1822 B. C.

LIBERTY BELL, the most famous bell in America, relic most prized by the nation, hung in the tower of Independence Hall, Philadelphia, 1776, and was rung when the Declaration of Independence was adopted. It was cracked while tolling for the death of Chief Justice Marshall, 1835, and has never been put to public use since. It was exhibited at the World's Fair, Chicago, 1893, and at the Atlanta Exposition, 1895.

LINEN first made in England, 1253; the rich people wore linen, the poorer woolen shirts.

LOCOMOTIVE, the first use of one in this country was in 1820.

LOCUSTS, the country of Palestine infected with such swarms of, that they darkened the air, and after devouring the fruits of the earth, they died, and their intolerable stench caused a pestilential fever, 406. A similiar circumstance occurred in France, 873; a large swarm of, flew over the city of Warsaw, June 17, 1816; swarms of, made their appearance near Aschersleben, June 24, 1816.

LOOKING-GLASSES made only at Venice, 1300.

LOOMS, the power loom invented by the Rev. Mr. Cartright, a clergyman of Kent, England, 1787.

LOTTERIES, the first mentioned by historians for sums of money, 1630.

MAGNIFYING-GLASSES first made in England by Roger Bacon, 1260.

MAMMOTH, first fairly complete one discovered near the mouth of the Lena, in Siberia, 1806.

MAPS AND GLOBES invented by Anaximander, 600 B. C.

MARBLE PAPER, a German invention belonging to the 17th century.

MATCHES, friction, first used in 1829.

MECKLENBURG Declaration of Independence issued May 31, 1776.

MICROSCOPES first used in Germany, 1621; the double ones, 1624; solar microscopes invented, 1740.

MILITARY ACADEMY, West Point, founded by Congress, March 16, 1802.

MISSOURI COMPROMISE passed March 3, 1820, and appealed May 24, 1854. It restricted slavery to south of 36° 30′.

MONASTERY, the first founded where the sister of St. Anthony retired, 270; the first founded in France, near Poictiers, by St. Martin, 360; Constantine IV. sends for a great number of friars and nuns to Ephesus, orders them to change their black habits for white and to destroy their images; on their refusal he orders their eyes to be put out, banishes them, and sells several monasteries, appropriating the produce, 770; they were totally suppressed by Act of Parliament in 1539.

MONEY, first mentioned as a medium of commerce in the twenty-third chapter of Genesis, when Abraham purchased a field as a sepulchre for Sarah, in the year of the world 2139; first made at Argos, 894 B. C.; has increased eighteen times its value from 1290 to 1640; and twelve times its value from 1530 to 1800.

MONROE DOCTRINE declared in the message of President Monroe, December 2, 1823. Re-asserted by President Cleveland in a message to Congress concerning the boundary line dispute between Venezuela and Great Britain, December, 1895.

MORMONS, sect of, founded by Joseph Smith, 1830; removed from Nauvoo to Salt Lake Valley, Utah, July 24, 1847.

MUSICAL NOTES invented in 1070; improved, 1330; printed, 1502.

NANTES, Edict of, tolerating Protestants, 1598; revocation, 1685.

NEEDLES first made in England by a native of India in 1545.

NEW ORLEANS, battle of, January 8, 1815, Jackson defeating the British. Captured by Farragut, April 26, 1862.

NEWSPAPER, the first authentic copy was printed in 1494; first daily, *Frankfort Gazette*, 1615. The first English was the *Weekly Newes*, 1622; the first in France, *Gazette de France*, 1631. The first advertisement appeared in 1648. The first American newspaper was printed in Boston, September 25, 1690, and was called *Publick Occurrences, Foreign and Domestic*. The first continuously printed in America was the *Boston News Letter*, 1702; first daily, *The Pennsylvania Packet*, 1784.

NULLIFICATION ORDINANCE passed by South Carolina, November 19, 1832. The proclamation of President Jackson denouncing the same was issued December 10, 1832.

ORGANS were invented in 750.

OXFORD UNIVERSITY, England, founded by Alfred, 886.

PAINTING, earliest account of, in the reign of Ninus, about 2000 B. C.

PAPER CURRENCY established in America May 15, 1775. Paper money first used in America, 1740.

PAPER made of cotton was in use in 1000; made of linen rags, 1319; made from straw, 1800.

PARCHMENT invented by King Attalus of Pergamus, 887 B. C.

PATENT RIGHT LAW first enacted in United States, April 15, 1790.

PAVING with stones first introduced, in Paris, 1186.

PEARLS, artificial, were invented 1686.

PENS for writing were first made from quills in 635. The substitution of steel for quill pens took place early in the present century, yet strange to say, nothing is known with certainty of the person who first invented the metallic pen. Fountain pens and glass pens are of recent date.

PENNYPOST set up in London and suburbs, by one Murray, an upholsterer, 1681, who afterwards assigned the same to one Dockwra; afterwards claimed by the government, who allowed the latter a pension of £200 a year, in 1711; first set up in Dublin, 1774; it was improved considerably in and round London, July, 1794; made a two-penny post in 1801.

PHILADELPHIA was founded by William Penn in 1682. Riots, native American and Irish, May 6 to 8, 1844. First National Convention of the Republican Party, 1856.

PHONOGRAPH invented in 1877 by Thomas A. Edison.

PHOSPHOROUS first made in 1677.

PHOTOGRAPHS were first produced in England in 1802; perfected in 1841.

PIANOFORTE invented about 1710 in Italy.

PINS were brought from France, and first used in England by Catherine Howard, Queen of Henry VIII. Before that time both sexes used ribbons, loop-holes, laces with points and tags, hooks and eyes, and small skewers made of gold, silver and brass. Pins were first made by machinery in America in 1832.

PIPES OF LEAD, for water, first cast in 1539.

PISTOLS first used by the cavalry in 1544.

PITCH and tar first made from pit coal at Bristol, in 1779.

PLASTER OF PARIS. Casting with it from the face invented in 1470.

PORCELAIN of Saxony greatly improved in 1767.

PORT-HOLES introduced for ships of war in 1545.

POST-OFFICE first established between Vienna and Brussels in 1516. Posts established regularly between London and all the principal towns throughout England in 1635. Postage stamps were introduced in England in 1840; in the United States in 1847.

POTTERY improved greatly by Wedgwood in 1763.

PRINCE OF WALES, the title of, first given to the king's eldest son, 1286.

PRINTING. The Assyrians and Babylonians used clay tablets, and wooden blocks were used by the Chinese as early as 952. Printing from movable types was invented by Faust in 1441, and made public by Gutenberg in 1454, although the invention is also claimed for L. Koster, of Haarlem, as early as 1423. The first Bible was printed by Faust and Schoffer, in 1456, and they also printed the first book with date, a Latin Psalter, 1457. Wooden type first introduced into England, by William Caxton, a London merchant, in 1477. The first English press was set up in Westminister Abbey, where it remained until 1494. The first American book, "Escala Espiritual," was printed by Juan Hablas, Mexico, about 1535. The first press in the United States was that of Stephen Daye, at Cambridge, Mass., 1639. Printing in colors was first introduced in 1626.

PYRAMIDS first erected about 2170 B. C.

QUICKSILVER first used for refining silver ore, in 1540.

RAILROAD. The first passenger railroad was opened in England, September 27, 1825; the first in America, Baltimore and Ohio, 1828, although freight was moved by rail at the granite quarries, of Quincy, Mass., as early as 1826. The first steam railroad was operated in the United States in 1830, from Albany to Schenectady—16 miles.

REFORMATION in Germany, 1517; in England, 1532.

REPUBLICAN PARTY. The first convention was held at Pittsburgh, February 22, 1856.

RESUMPTION of Specie Payments in the United States—Act approved 1875; took effect January 1, 1879.

RIBBON LOOMS. It has been asserted that these looms were first known to the Swiss, but others claim their invention for a German in the town of Dantzic in the 16th century.

RULING-MACHINES invented by a Dutchman in London in 1792.

SADDLES. Pliny informs us that one, Pelethronius, was the first to introduce a piece of leather fastened to the back of a horse for the accommodation of its rider. For a long time these cloths and pieces of leather were regarded as unmanly, and were, therefore, regarded by soldiers with great scorn. The old German races despised the Roman cavalry for riding on such effeminate contrivances. Saddles of the kind now used appear to have been in use in 385. Side-saddles first used in 1380. Previous to their introduction women always rode astride.



INDEPENDENCE HALL, PHILADELPHIA

SAILCLOTH first made in England in 1590.

SALTING HERRINGS after the Dutch method first used in 1416.

SALTPETER first manufactured in England, in 1625.

SAWS. The inventor of the saw is said, by the old Greek writers, to be Talus or Perdox. Pliny ascribes the invention to Dœdalus, but Hardouin affirms that the passage in which he does so refers to Talus, and not to Dœdalus. Talus was the son of a sister of Dœdalus, and the invention is said to be due to his using the jawbone of a snake to cut through a piece of wood. His master grew jealous of the honor Talus won by this invention, and caused him to be privately put to death.

SCHOOLS, public or common, first known in America, were established in the New England States about 1642.

SEDAN CHAIRS introduced into England in 1734.

SEWING-MACHINE first patented in England, in 1755. The first complete machine was constructed by an American, Elias Howe, in 1846.

SEXTANT invented by Tycho Brahe, at Augsburg, in 1550.

SHAY'S REBELLION, in Massachusetts, 1786–87.

SLEEPING-CARS were first used in 1858. Pullman's patent dates from 1864.

SOAP first made in London and Bristol in 1524. The first express mention of soap appears in Pliny and Galen. The former speaks of it as an invention of the Gauls.

SPEAKING-TRUMPETS invented by Kircher, a Jesuit, in 1652.

SPINNING-WHEEL invented at Brunswick, 1530.

SPECTACLES invented by Spina, a monk, of Pisa, in 1299.

STAMP ACT enacted March 22, 1765; repealed March 19, 1766.

STATUTES of the United States first revised and codified in 1873.

STEAM. The steam engine boiler was discovered by the Marquis of Worcester in 1663. Newcommen's engine was patented in 1705, and the invention was perfected by James Watt in 1773. The high pressure engine was invented by an American, Oliver Evans in 1779. The first steam vessel of which there is any record was that of Papin (France), in 1707. Then follow those of Jonathan Hulls (England), 1736; William Henry (Conestoga River, Pa.), 1763; James Rumsey (Md.), 1786; John Fitch (Delaware River), same year. In 1806 Robert Fulton constructed the Clermont, which plied regularly between New York and Albany, at a speed of five miles per hour. The first steamer crossing the Atlantic made the voyage from Savannah to Liverpool in twenty-five days, A. D. 1819.

STEEL. The invention of steel is of very great antiquity and the process of hardening iron is described in the Old Testament (Isaiah xliv, 12). The helmet of Hercules, described in Hesiod, appears to have been of steel. Homer refers to the process of hardening steel by immersing it, while red hot, in cold water.

STEREOTYPE PRINTING invented by William Gid, a goldsmith, of Edinburgh, in 1735.

STIRRUPS, according to a statement made by the Emperor Mauritius, were first used in the 6th century. Hippocrates and Galen speak of a disease which, in their time, was occasioned by long and frequent riding, because the legs hung down without any support.

SUGAR is first mentioned in 625 by Paul Eginetta, a physician. It came originally from China and the East; was produced in Sicily in 1148, in Maderia in 1419, in the Canary Islands in 1503, and in the West Indies by the Portuguese and Spaniards in 1510. In 1641 it was cultivated at Barbadoes. Sugar-refining was first carried out by a Venetian in 1503, and this process was adopted in England in 1569. Sugar cane was first cultivated in the United States in 1751, near New Orleans, the first sugar mill being constructed in 1858.

SUNDAY-SCHOOLS were first established by Robert Raikes, Gloucester, England in 1781.

SUN-DIALS invented 558 B. C. The first in Rome, 308 B. C., was that erected by Papirius Cursor, when time was divided into hours.

TANNING LEATHER. A new and more expeditious method than that previously in use was invented in 1795.

TAX. The first tax levied on the people was by Solon, 540 B. C.

TEA first known in Europe in 1610, being brought from India by the Dutch.

TELEGRAPHS (mechanical) invented in 1687. First used by the French in 1794, and by the English in 1796. The first electric telegraph was operated from Paddington to Drayton, England, in 1835, the same year in which Morse's telegraph was invented. The first telegraph line in operation in America was between Baltimore and Washington in 1844. The first submarine cable was laid in 1851, between Dover and Calais, and the first Atlantic cable was operated in 1858.

TELEPHONE. A. Graham Bell first presented a speaking telephone at the Centennial Exposition, Philadelphia, in 1876.

TELESCOPES. The first reflecting telescope made on the principle discovered by Sir Isaac Newton in 1692.

TEMPERANCE SOCIETY, the first in this country was organized in Saratoga County, N. Y., in March, 1808.

THREAD first made at Paisley, Scotland, in 1722.

THERMOMETERS first invented by Drebel, a Dutchman, in 1620; improved by Reaumur in 1730, and by Fahrenheit in 1749.

TOBACCO was first introduced into England, from Virginia, in 1583.

UNION of England and Scotland, 1707; Great Britain and Ireland, 1801.

VACCINATION. See *Inoculation*.

VENTILATORS first introduced by the Rev. Dr. Hales in 1740.

VIOLINS of the modern kind invented about 1477. Introduced into England by Charles II.

WALL-PAPERS first used in Spain and Holland in 1555. Flock or velvet wall-papers were first used in 1620.

WAR SHIPS. In 1814 Sir Robert Seppings introduced various most important improvements for the construction of war ships. The lower parts of the frames of ships of war were then, for the first time, filled in, a system of diagonal trussing was introduced, the stern was altered in form, so that it no longer remained open to the fire of an enemy, and the upper decks were enlarged. Sir W. Symonds altered them so as to decrease the quantity of ballast required in 1832. In the International Exhibition of 1851 various improvements in this direction were shown, but great iron-cased ships were not then thought of. In July, 1854, the first of a new class of screw, gun vessels was launched for use during the Russian war. To operate with these, vessels of iron were constructed to bombard the fortresses in the Baltic. The first French iron-cased ship was a frigate called the "Cloire," and this was quickly followed by the first English ship of that kind, the "Warrior." Since then vessels of this kind have been subject to a variety of alterations and experiments tending to improve both their strength and their sailing qualities. The first battle between iron ships of war occurred in the war for the Union, the Merrimac and Monitor being the contestants.

WATCHES were invented at Nuremberg in 1477, and were first introduced into England from Germany in 1577.

WATER MILLS for grinding corn are said to have been invented by Belisarius when Rome was besieged by the Goths in 555. Pliny, however, mentions wheels turned by water.

WEATHER-COCKS. The earliest mention of a weather-cock is that made by Vitruvius, concerning that on the tower built at Athens by Andronicus Cyrrhestes.

WILD-FIRE invented by a Greek in 663.

WILMOT PROVISO, to restrict slavery, offered in the House of Representatives, August 8, 1846, by David Wilmot, of Pennsylvania.

WIRE invented at Nuremberg in 1351.

WIRE-DRAWING. The first record we have of this art is probably that contained in Holy Writ, where we are told that gold was beaten and cut to threads, so that it could be interwoven in cloth. The present mode of forming metallic threads, that known as wire-drawing, was first known in the 14th century.

WOOLEN CLOTH. Although the making of woolen cloth is one of the most ancient arts, its manufacture was not known in France until 1646, when it was made at Sedan. It was first made in England in 1331, but was not dyed or dressed until 1667.

YELLOWSTONE NATIONAL PARK established by Act of Congress, February 28, 1871.

THE COUNTRIES

OF THE

WORLD

Historical and Statistical Information.

A CONDENSED history of the nations of the globe, containing information relating to the forms of government and present condition of the people, is not only of interest to the general reader, but also furnishes information of great value. In this way the ends of the earth are brought near. A panorama of past events, including those of most recent date, passes before the eye. Here, also, means are afforded for obtaining that culture which cannot be complete without a knowledge of the world at large.

It must have occurred to every student of history that there are great masses of rubbish of no account, which are, in fact, a hindrance and vexation. Only by condensing the voluminous records of the past, and bringing them within a narrow compass, are we able to trace the golden chain of events.

The following pages present the essential facts of history, enabling the reader to obtain a clear and intelligent idea of those annals which preserve the life and deeds of nations. The aim has been to depict great historic features, furnishing a record of the most important transactions, and otherwise gathering into this treasury of knowledge such information as will be of the greatest practical value. This comprehensive survey of the countries of the world forms a ready hand-book for everyday use.

A Fountain of Knowledge.

That a knowledge of history, ancient and modern, forms an important part of education, is conceded by every thoughtful person. For this reason the study of this subject is required in all our schools and academies, and it is admitted that a finished education demands a thorough acquaintance with history, no less than with the common branches universally taught, or with the sciences and ancient languages. This subject is one of the great sources of the world's knowledge and wisdom, and while it has its dry details and facts, it is also invested with romance, the charm of which never dies.

The comprehensive history of nations includes their origin and certain great features which have resulted from political changes. We behold revolutions, sanguinary battles, struggles for better forms of government, the peaceful achievements of diplomacy, and mark the great convulsions, victories and enterprises, which have changed the pages that record the annals of the past, and, as it were, have formed the world anew.

THE UNITED STATES

AMERICA, including a vast extent of territory, embracing every variety of climate, and bearing within it, besides its precious ore and gems, the germs of immense wealth, remained undiscovered until the 11th of October, 1492, when Christopher Columbus, a native of Genoa, who had sailed from Spain with three small vessels under the patronage of Ferdinand and Isabella, the Castilian monarch, first beheld a light on the shore of the new continent, two hours before midnight. On the next day he set foot in the New World.

The Christian adventurers did not fail to kneel upon the sand and offer up their thanks for having been preserved through the perils of a long voyage. This island was called Guanahani, by the natives, a name which Columbus altered to St. Salvador, and was one of the Bahama Islands.

It is worthy of remark that the vast continent which Columbus discovered was not called by his name, but derived its appellation from Amerigo Vespucci, a Florentine navigator, who made some subsequent discoveries, in company with Alonzo de Ojeda, in 1499. Columbus did not rest satisfied with his first successful voyage or the fame which he acquired by it, but he undertook others. He was, however, in the end, the victim of jealousy and ingratitude. The Spanish colonists at Hispaniola became discontented and preferred complaints against him, sending home accusations and remonstrances by every ship that sailed to Spain.

The Discoverer in Irons.

In consequence of this, Don Francisco de Bobadilla was sent out by the court, and invested temporarily with the chief power, being permitted to use his own judgment in quelling the disturbances of the colonies. This person scrupled not to arrest Columbus and put him in irons, from which he would not suffer himself to be freed, when he was sent to Spain.

"No," said he, when the attendants offered to remove them; "the truth must be apparent, and my patrons are too noble, too generous to overlook me. Then, if fortune again smiles upon me, these will serve as affecting memorials of sorrow past; I will not part with them, and I even wish that, when I am no more, they may be suspended over my sepulchre." When he again set foot in Spain, he might have exclaimed, in the language of the poet:

"Are these the wreaths of triumph you bestow
On those who bring you conquest home and honor?"

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Columbus was liberated immediately by royal order, and received at court with great respect. But though Bobadilla was recalled, Columbus in vain supplicated to be restored to his government; he was put off by vague promises, and the post finally given to Don Nicholas Ovando, a practical as well as accomplished man. Thus after three momentous voyages, and the acquisition of much fame, he found himself displaced and thwarted in a point in which he conceived his honor concerned, and his hard-earned authority torn from his possession.

But it was not the nature of Columbus to sink under his misfortunes; on the contrary with four small caravels, the largest being but of seventy tons burthen, he set out on his fourth voyage of discovery with the intention of completing the circumnavigation of the globe, visiting the Indies, of which Vasco da Gama had given so inspiriting an account.

A Singular Occurrence.

Leaving Cadiz on May 9, 1502, he reached Martinique, one of the Windward Islands, June 15. Having touched at Cuba, he pursued a southwesterly course, until he reached Guanaja, an island on the coast of Honduras, whose inhabitants had attained a pretty high degree of civilization. Their persons were covered with cotton garments dyed with a variety of bright and pleasing colors.

He mentions a curious occurrence as taking place here. He had been presented, among other animals, with a peccary, or American pig, and one of those monkeys with prehensile tails, indigenous to America. The peccary being thrown in the way of the monkey, the latter, by a dexterous use of its tail, confined the jaws of the pig in such a manner as to expose it helplessly to the action of the monkey's claws. "This appeared to me so strange," Columbus writes to his patrons, "that I thought fit to write it down for the information of your majesties."

The Spaniards entertained the most exaggerated ideas of the wonders of the New World. To most of them, it appeared a realm of magic, a fairyland, in which supernatural occurrences were by no means infrequent. Thus Juan Ponce de Leon, in 1512 fitted out three ships from Porto Rico, of which he was governor and set forth in search of an Indian fountain which was fabled to restore all who bathed in it, even if they were tormented by the infirmities of extreme old age, to the freshness, vigor and beauty of youth. Although he failed to find the fountain, he made the discovery of Florida.

Extinction of the Red Men.

From the time of the first European settlements in this part of America, the number of the Indians has diminished rapidly, and they are now reduced to a mere handful, whom the wave of emigration is fast rolling to the shores of the Western Ocean. They have seen their hunting grounds diminished, their forests swept away by their white foes, and the smoke of the Christian village rising where once their council-fires blazed.

The discovery of America awakened the enterprise of various nations of the Old World, and they fitted out numerous expeditions to conquer and colonize. North America, which is of vast extent, its surface containing about eight millions of square miles, fell into the hands of the English, French and Spanish. Mexico, so valuable for its mines of gold and silver, inhabited at the period of its discovery by intelligent and peaceable nations, was conquered by Fernando Cortez, a Spanish general, who scrupled not to make use of the basest treachery, and to shed the blood of the natives like water,

to accomplish his purposes. Mexico was for a long time attached to Spain, to which it furnished immense wealth, but at present has a republican government which it can hardly be said to enjoy, the country is in such an unsettled state.

The eastern shores of North America, were settled principally by the English. In spite of the hostility of the Indians, the ravages of disease and hardship, the colonies increased rapidly. The population of the middle portion of North America, now called the United States, was estimated, in 1775 at about 3,000,000. The number of the colonies was thirteen. Poverty and oppression had first driven them from their native land.

Settlement of the Colonies.

The following dates of the settlement of the colonies, are given for reference:

Virginia, 1607.

New York, by the Dutch, 1614; occupied by the English, 1664.

Plymouth, 1620; incorporated with Massachusetts in 1692.

Massachusetts, 1628.

New Hampshire, 1623.

New Jersey, by the Dutch, 1624; occupied by the English in 1664.

Delaware, by the Dutch, 1627; occupied by the English in 1664.

Maine, 1630; united with Massachusetts in 1677.

Maryland, 1633.

Connecticut, 1635.

New Haven, 1637; united with Connecticut in 1662.

Providence, 1635; Rhode Island, 1638; } united 1644.

North Carolina, 1650.

South Carolina, 1670.

Pennsylvania, 1682.

Georgia, 1733.

The English settlers in the northern parts of America, were influenced by different motives from those which actuated the Spaniards who quitted their native country for the shores of the New World. The latter were urged onward by a reckless spirit of adventure, by the promptings of heated imaginations, and by the most insatiable cupidity. The former were impelled by far worthier motives. Many causes operated together in the mother country, to favor emigration among the resolute and hardy.

The people of England had been led to examine the nature of the power to which they were subjected, and the monstrous doctrines of prerogative and religious intolerance, were denounced by many who had courage to think and speak for themselves upon the subjects. The friends of republican institutions multiplied with great rapidity, the natural result of the progress of literature, and the increase of wealth with the commons. In 1628 the wealth of the House of Commons far exceeded that of the House of Lords.

The English Puritans.

At the same time, the reformation which had been carried into effect by Henry VIII, while it had purged the country of many abuses long complained of, had established a form of worship which was regarded by many as little better than that which had given way before it. Those who refused to conform to the established form, contemptuously termed *Puritans* by their opponents, and anxiously sought scope for the exercise of religious rights, and, since the immunities they demanded were not granted them at home, determined to seek refuge from persecution in a remote quarter of the globe.

King James granted, in 1606, letters patent to two companies, called the London and Plymouth Companies, by which possession


1620

was given them of the territories lying between the 34th and 45th degrees of north latitude; the southern part to the London, and the northern part to the Plymouth Company: the king himself having undertaken to frame for them a code of laws.

Three ships were provided by the London Company, on board of which were 105 persons, who were expected to remain at Roanoke, which was the place of their destination. They made a settlement on a peninsula and called it Jamestown. This was the first permanent settlement made by the English in Virginia.

Story of Captain Smith.

Shortly after, the company received supplies from England, and an accession to their numbers, swelling the number to 200. Two vessels were freighted for England; one loaded with a yellow and brilliant sand, common in many places in the vicinity, but supposed by the colonists to contain a large proportion of gold; the other vessel was loaded with tobacco. The most efficient member of the council was Captain Smith, who was taken by the Indians while on an exploring expedition.

He was led to the place of execution, and his head placed upon a stone, while Powhatan, the Indian chieftain, stood over him with uplifted club, regardless of the earnest solicitations of his daughter Pocahontas, then about 13 years of age. The princess, finding her entreaties unavailing, fell upon Smith, folded him in her arms, and laid her face upon his, determined to meet death with him she could not save. Moved by this touching devotion, Powhatan relented, and, two days afterwards, sent Smith to Jamestown.

In 1609, the destruction of the whole colony was planned by the Indians, but their plans were defeated by the exertions of the princess Pocahontas, who, in a dark night, went to Jamestown, and put the president upon his guard. Pocahontas married an English gentleman by the name of Rolfe, embraced the Christian religion, and was baptized by the name of Rebecca. She died four years after at Gravesend, on her return with her husband from England. In 1619, twenty negroes were brought to Virginia in a Dutch vessel, and sold to the colonists, whence one may date the commencement of the slaveholding system.

In 1614 Captain Smith was sent from England to explore North Virginia. He ranged the coast from Penobscot to Cape Cod, making observations on the shores, harbors, islands and headlands; and made a map of the country, which on his return to England, he showed to Prince Charles (afterwards Charles I), who gave it the name of New England.

Arrival of the Pilgrims.

The Rev. Mr. Robinson with his flock, of the Reformed Church of the North of England, removed to Amsterdam in 1606, and soon after to Leyden. A variety of motives led his congregation to turn their attention to the New World; the principal were, the enjoyment of perfect liberty of conscience; "the preservation of ecclesiastical affairs distinct from those of the State;" and a hope of laying the foundation of an extensive empire, that should be purged from all religious impurities.

Having made an arrangement with the Virginia Company, they sailed from Plymouth, Eng., on September 6, 1620, and on November 10th anchored in Cape Cod harbor. Perceiving that they were so far north as to be without the territory of the South Virginia Company, some hesitation arose;



STATE, WAR AND NAVY BUILDING, WASHINGTON, D. C.

but the winter was at hand, and it was now too late to go in search of a settlement within the jurisdiction of that company.

Previous to their landing, after prayer and thanksgiving, they formed themselves into a body politic, binding themselves by a written covenant to be governed by the decisions of a majority. This instrument was subscribed by 41 persons, who, with their children and domestics, composed a company of 101 persons. Mr. John Carver was chosen, without one dissentient voice, governor for one year.

Saved from Famine.

Parties were sent on shore to make discoveries. Some Indians were seen but could not be overtaken. A considerable quantity of corn was found in heaps of sand, secured in baskets, which served for seed the ensuing spring, and tended to save the adventurers from famine. On December 6th, Carver, Standish, Winslow, Bradford and others, sailed to various places, to discover a suitable situation for a settlement. Monday, December 11, O. S., they landed at what was afterwards called Plymouth, and from the excellence of the harbor, and the favorable appearance of the land, resolved to commence a settlement here.

In 1637 the troops of Massachusetts and Connecticut had several engagements with the Pequot Indians, and finally subdued them. This year was made famous by a great theological disturbance caused by Ann Hutchinson, a woman of considerable talents, who was accused of maintaining heresies, and supporting them by lectures frequently given to large audiences. The result was a synod of the ministers, elders and messengers of the churches, who, after three week's deliberation, condemned as heretical eighty-two opinions which had been disseminated in New England, and some banishments took place, among them that of Mrs. Hutchinson, her husband and children.

In 1750 a number of noblemen, merchants and others, of London, together with some influential Virginia planters, formed a society under the name of the Ohio Company, for the purpose of commerce with the Indians and the settlement of parts of the country. The French Governor in Canada fearing the valuable fur trade of the French would be destroyed, infringed upon the possessions of the Ohio Company, who laid their grievances before Dinwiddie, Lieutenant-Governor of Virginia.

The Assembly of Virginia determined to demand, in the name of the King, that the French should desist. George Washington, then in his 22d year, was despatched to the French Commandant to convey the demand. As this was not complied with, the British determined to attack Fort du Quesne (now Pittsburg), and Washington commanded the expedition, which, although unsuccessful, reflected upon him great credit.

Brave to the Last.

On the arrival of Braddock, in the spring of 1775, various military operations were planned. An expedition against Canada was successful, but the conquered territory was speedily relinquished by the victors. General Braddock's expedition against Fort du Quesne was disastrous in the extreme. Heedless of the advice of Washington, who cautioned him against an ambush, he pressed forward, and was surprised by the Indians.

Instead of retreating or scouring the woods, Braddock vainly endeavored to form his men; and continued with wanton bravery on the spot where he was first attacked, till three horses were shot under him; when he received a shot through the lungs and fell.

The remains of the army immediately fled, bearing away the body of their rash and unfortunate commander. Every mounted officer except Washington, was either killed or wounded, and he was providentially preserved, for an Indian had marked him as a victim, and fired at him several times with a rifle that had never before deceived him; 64 out 85 officers, and half the privates were killed. But Washington bore off the wreck of the forces with consummate skill and undaunted courage. The war was continued until 1763, and, although the military operations were occasionally unsuccessful, the bravery of the British and provincial troops prevailed, and the fall of Quebec gave a death blow to the hopes of the French.

Events Preceding the Revolution.

We now come to the commencement of those acts which created that patrotic feeling in the colonies, which resulted in the Declaration of their INDEPENDENCE.

In 1674 the Parliament of Great Britain passed an act, the preamble to which ran thus: "Whereas it is *just and necessary* that a *revenue* be raised in America, for defraying the expenses of defending, protecting and securing the same, etc." The act then proceeds to lay a duty on clayed sugar, indigo, coffee, silk, molasses, calicoes, etc., being the produce of a colony not under the dominion of his majesty. To this the colonists submitted; though not without complaint and remonstrance.

Massachusetts recommended a colonial congress, to consult for the general welfare. A congress from most of the colonies, consisting of twenty-eight members, met at New York; remonstrated against the Act of Parliament; petitioned for its repeal; and made a declaration of the rights of the colonies; declaring that taxation and representation were inseparable; and that Parliament had no right to take their money without their consent.

In 1767, the Chancellor of the Exchequer brought into Parliament a bill for imposing a duty to be collected in the colonies on glass, paper, painter's colors and tea.

The Tea Thrown Overboard.

The colonists were again violently excited. The corresponding committees, which had been forming throughout the colonies for the last two years, excited resistance, declaring such as aided directly or indirectly in these violations of liberty, enemies to their country. The consequence was that the cargoes of tea, sent to New York and Philadelphia, were sent back: and those sent to Charleston, stored, but not offered for sale. The tea ships, intended for the supply of Boston, after the inhabitants had tried in vain to have them returned, they being consigned to the relations of Governor Hutchinson, were entered by about seventeen persons in the disguise of Indians, and three hundred and forty-two chests of tea were thrown into the dock, no other damage being done.

In January, 1775, the Earl of Chatham brought forward a conciliatory bill in the House of Peers, which was rejected two to one. Lord North, the Prime Minister, introduced a bill for restraining the trade of the New England colonies. Receiving information of the general opposition in the southern colonies, he introduced another bill, equally restraining their trade, but excepting North Carolina, Delaware and New York.

The time had now come for testing the nerve of the colonists. An attempt was made by the British troops to seize the military stores at Concord, April 19, but they had to encounter the armed opposition of the militia at Concord and Lexington. Boston

was now blockaded. Ticonderoga and Crown Point were taken. The battle of Bunker's Hill followed, and an unsuccessful expedition against Canada preceded the Declaration of Independence.

On May 10, 1775, the Continental Congress met at Philadelphia, and on June 15, unanimously elected George Washington, then a member from Virginia, Commander-in-Chief of the forces raised, and to be raised, for the defence of the colonies. June 7, 1776, Richard Henry Lee, of Virginia, made a motion in Congress, for declaring the colonies free and independent. After much debate, on the Fourth of July, the thirteen colonies were declared free and independent, under the title of The United States of America.

Gallant Defence of the Fort.

An attempt was made in June and July, with 3000 British troops, under the command of General Clinton and Sir Peter Parker, to destroy the fort on Sullivan's Island, near Charleston (S. C.). The fort was defended by Colonel Moultrie with about 400 men. After an action of ten hours, the British were forced to retire with a loss of about 200 men. Ten Americans were killed and 20 wounded.

Soon after the evacuation of Boston by the British troops, March 17, Washington made his headquarters at the city of New York, with the principal part of the army. British troops to the number of 24,000 men under Lord Howe, and his brother, Sir William Howe, landed, August 22, on Long Island near the Narrows, about nine miles from the city. The American forces, at this time, amounted to upwards of 17,000 men, and those principally raw recruits.

A battle was fought on Long Island, August 27, in which the Americans were defeated. The battle of White Plains took place on October 28. The retreat of the American forces through the Jerseys and across the Delaware followed; the battles of Trenton, December 26, and Princeton, January 3, 1777, were also among the events of this period.

The campaign of 1777 closed under better circumstances. General Burgoyne surrendered at Saratoga, October 17. In 1778 a treaty of commerce and alliance was made between Louis XVI and the Commissioners of the United States, on February 6th. French troops soon after arrived. Various military operations ensued. In the Southern States, where there was no regular American army, the partisan warfare kept up by Marion, Sumter, Morgan, and Green, thinned the ranks of their enemies. On October 19, 1781, Cornwallis surrendered at Yorktown. The fall of this large British army may be considered as the closing of the war.

Public Thanksgiving.

General Washington ordered divine service in the different divisions and brigades. Congress went in solemn procession to the Dutch Lutheran Church in Philadelphia, returned thanks to Almighty God for the success of the combined armies, and recommended a day of general thanksgiving and prayer throughout the United States.

Savannah was evacuated in July, 1782, and Charleston in December. Great Britain acknowledged our independence November 30, 1782. Holland acknowledged the independence of the United States in April; Sweden in February, 1783; Denmark in the same month; Spain in March; Russia in July.

The debt of the United States, at the close of the war, was $40,000,000. Congress had power to make war, and to create debts, but no power to carry on the war, nor ability to pay debts, but by appeals or recommendations to thirteen independent sovereignties,

whose unanimity alone, seldom to be expected could support public credit, or give efficacy to the proceedings of Congress.

The new Federal Government was established in 1789. Washington was unanimously chosen first President, and John Adams Vice-President. Mr. Jefferson was selected for the Department of State.

Depredations by France.

The Indian War and an insurrection in the western part of Pennsylvania, on account of the tax on domestic spirits were favorably terminated. The insults and maritime depredations committed by the French, induced America to take up arms in defence of her rights, but a change of rulers in France prevented the effusion of blood. On the retirement of Washington, John Adams was elected to succeed him, and in 1801, Thomas Jefferson was chosen the third President of the United States.

The claim of searching American vessels, and impressing from them British seamen, and the British orders in council prohibiting the exportations of the United States, together with other outrages committed by the British, produced a declaration of war against Great Britain in June, 1812. The successes of the British were but few and trifling, while the American navy triumphed in a series of brilliant exploits, and the gallant defence of New Orleans by Gen. Andrew Jackson, crowned the American arms with laurels. Peace was concluded at Ghent, December 24, 1814.

The next great event of national importance was the war with Mexico. What is now known as Texas was claimed by that country. The territory was sparsely settled, mainly by adventurers from the Southern States. In 1836 Texas revolted from Mexico and established a Republic. In 1845 Texas was annexed or re-annexed to the United States and admitted as a State. A dispute with Mexico at once arose as to its Western boundary and war followed; the Union forces being commanded by Gen. Zachary Taylor and Gen. Winfield Scott. The war resulted disastrously to the Mexicans under Gen. Santa Anna, and a treaty of peace was concluded in 1848.

The Irrepressible Conflict.

The subject of slavery created a growing agitation throughout the country, which resulted in the formation of the Republican party in 1856, with Col. John C. Fremont as its candidate for the Presidency. It sprang rapidly into power, but failed to obtain a majority of the votes of the Electoral College. The agitation of the subject of slavery continued with great vigor and bitterness. Upon the election of Abraham Lincoln as President in 1860, eleven of the Southern States seceded and formed an independent government.

The people of the North resisted the dismemberment of the Union and the great Civil War followed. In January, 1863, President Lincoln, by proclamation declared the slaves in the part of the South then in rebellion, free. The character of the struggle was at once changed in the eyes of foreigners, and the sympathy of the outside world turned gradually to the North. The struggle between the North and the South was one of vast magnitude. Sanguinary battles were fought on land and water. At length the Federal forces, under Gen. Ulysses S. Grant, were victorious, and on April 9, 1865, the Confederate army, under Gen. Robert E. Lee, surrendered at Appomattox Court House, Va.

On April 15, 1865, President Lincoln was assassinated at Washington, and an attempt

was made upon the life of Mr. Seward, Secretary of State. The war had cost the nation some $10,000,000,000.

The seceded States were again taken into the Union on conditions contained in the 13th, 14th and 15th amendments to the Constitution, abolishing slavery, and giving the negro the right to vote. In 1867 the United States purchased Alaska from Russia, the principal result of which up to the present time has been recurring complications with Great Britain as to the right to capture seals.

The Democratic Party.

From Lincoln onward till 1884, the presidents had all been Republicans—Johnson, Grant, Hayes, Garfield and Arthur. In 1884 the Democratic party, reorganized and containing many of the young men of the North who had grown up since the war, elected its candidate, Mr. Cleveland, over Mr. Blaine. In 1888 the Democrats made the campaign on the basis of a reformed tariff in the direction of less protection. The Republicans won, Mr. Harrison becoming President, and by passing what are known as the McKinley Bill and the Administrative Bill reformed the tariff in the direction of protection to American industries.

In 1891 a House of Representatives overwhelmingly Democratic was elected.

In 1892 the election resulted in the return of the Democratic candidate, Mr. Cleveland, by a very large majority over Mr. Harrison. Mr. Cleveland was inaugurated on March 4, 1893.

On the first of May following, the World's Fair was opened at Chicago, the object of which was to commemorate the four hundredth anniversary of the discovery of America by Columbus. The exposition was participated in by all the leading nations, and was on a scale of unequalled magnificence.

The elections of November, 1894, resulted in Republican victories all over the Union.

Subsequent events included two issues of bonds to maintain the gold reserve. Another issue was provided for, and the subscription was opened in New York, February 20, 1895. Subscriptions for $60,000,000 were made in a few minutes.

Decision on the Income Tax.

On April 8, 1895, the United States Supreme Court delivered a decision respecting the Income Tax law, which declared that the Federal Government had no authority to collect a tax on incomes derived from state, county and municipal bonds.

A message sent to Congress by President Cleveland concerning the dispute between Great Britain and Venezuela respecting the boundary line between the latter country and British Guiana, awakened great interest throughout the country, and led to the formation of a commission for investigation. The message was considered to be a vigorous assertion of the Monroe doctrine.

A resolution expressing sympathy with the cause of the insurgents in Cuba was passed by the United States Senate, February 28, 1896. This was followed by demonstrations hostile to the American flag in several towns of Spain. Prompt apology was made by the Spanish authorities, and friendly relations were continued between the two countries.

The Presidental campaign of 1896, which was one of unusual excitement on account of the monetary questions involved, resulted in the election of Hon. William McKinley as President and Hon. Garret A. Hobart as Vice-President, the former of Ohio and the latter of New Jersey. Mr. McKinley was inaugurated March 4, 1897.

The Star-Spangled Banner

O! say, can ye see by the dawn's early light
What so proudly we hail'd by the twilight's last gleaming?
Whose bright stars & broad stripes, through the clouds of the fight,
O'er the ramparts we watch'd were so gallantly streaming?
And the rockets red glare, the bomb bursting in air,
Gave proof through the night that our flag was still there
O! say does that Star-Spangled Banner yet wave
O'er the land of the free & the home of the brave?

On that shore, dimly seen through the mists of the deep,
Where the foe's haughty host in dread silence reposes,
What is that which the breeze, o'er the towering steep,
As it fitfully blows, half-conceals, half-discloses?
Now it catches the gleam of the morning's first beam,
In full glory reflected now shines on the stream:
'Tis the Star-Spangled Banner—O long may it wave
O'er the land of the free & the home of the brave

And where is that band who so vauntingly swore
That the havoc of war & the battle's confusion
A home & a country should leave us no more?
Their blood has wash'd out their foul footstep's pollution.
No refuge could save the hireling & slave
From the terror of flight or the gloom of the grave
And the Star-Spangled Banner in triumph doth wave
O'er the land of the free & the home of the brave.

O! thus be it ever when freemen shall stand
Between their loved homes & the war's desolation;
Blest with victory & peace may the heav'n rescued land
Praise the power that hath made & preserved us a nation
Then conquer we must—when our cause it is just,
And this be our motto—In God is our trust—
And the Star-Spangled Banner in triumph shall wave
O'er the land of the free and the home of the brave.

Washington,
Oct 21—40

FAC-SIMILE OF THE ORIGINAL COPY OF THE STAR-SPANGLED BANNER.

America.

My country, 'tis of thee, Sweet land of liberty,
Of thee I sing;
Land where my fathers died, Land of the pilgrims' pride,
From every mountain side
Let freedom ring.

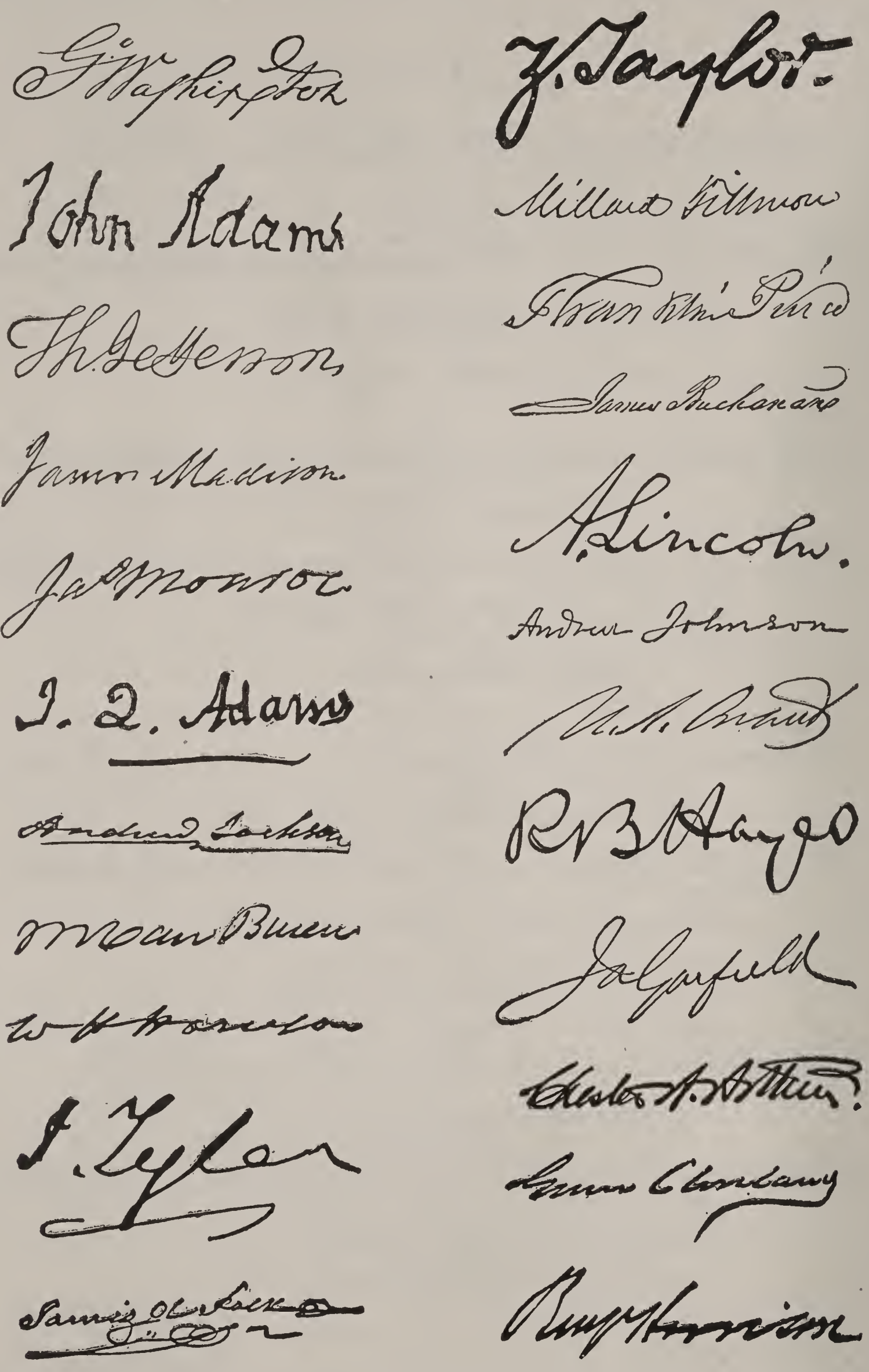
My native country, - thee, Land of the noble, free, -
Thy name I love;
I love thy rocks and rills, Thy woods and templed hills,
My heart with rapture thrills
Like that above.

Let music swell the breeze, And ring from all the trees
Sweet freedom's song;
Let mortal tongues awake, Let all that breathe partake.
Let rocks their silence break, -
The sound prolong.

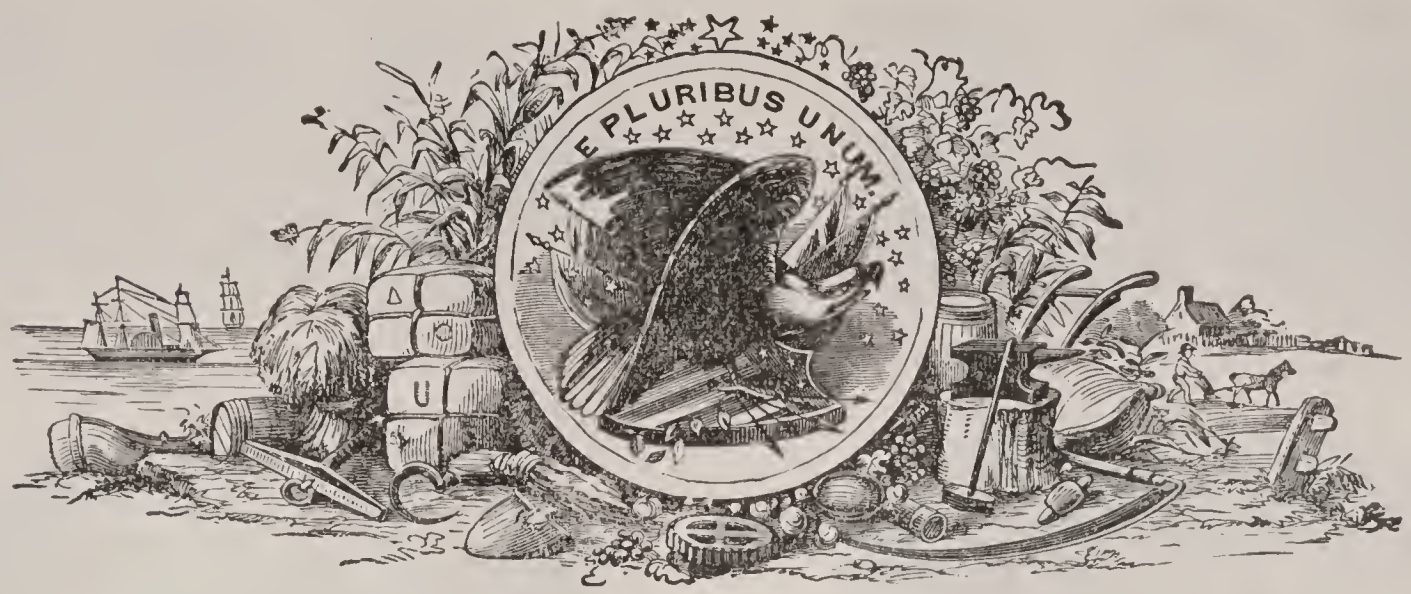
Our fathers' God, - to Thee, Author of liberty,
To Thee we sing;
Long may our land be bright With freedom's holy light;
Protect us by thy might,
Great God, our King.

1832—1892. S. F. Smith

FAC-SIMILE OF THE ORIGINAL COPY OF OUR NATIONAL HYMN.



AUTOGRAPHS OF THE PRESIDENTS.



GREAT SEAL OF THE UNITED STATES.



COAT-OF-ARMS OF VIRGINIA.



COAT-OF-ARMS OF NEW YORK.



COAT-OF-ARMS OF MASSACHUSETTS.



COAT-OF-ARMS OF MARYLAND.



COAT-OF-ARMS OF NEW JERSEY.



COAT-OF-ARMS OF NEW HAMPSHIRE.



COAT-OF-ARMS OF DELAWARE.



COAT-OF-ARMS OF CONNECTICUT.



COAT-OF-ARMS OF RHODE ISLAND.



COAT-OF-ARMS OF PENNSYLVANIA.



COAT-OF-ARMS OF NORTH CAROLINA.



COAT-OF-ARMS OF SOUTH CAROLINA.



COAT-OF-ARMS OF GEORGIA.



COAT-OF-ARMS OF VERMONT.



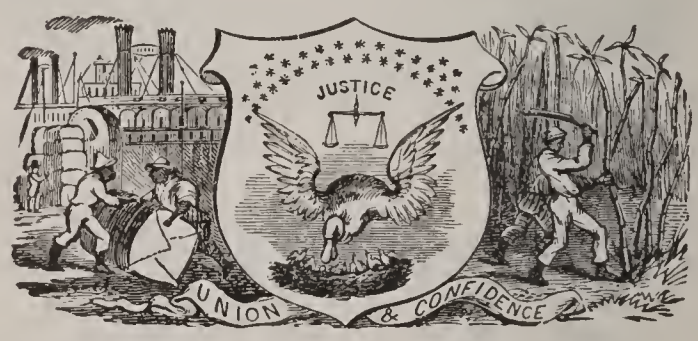
COAT-OF-ARMS OF KENTUCKY.



COAT-OF-ARMS OF TENNESSEE.



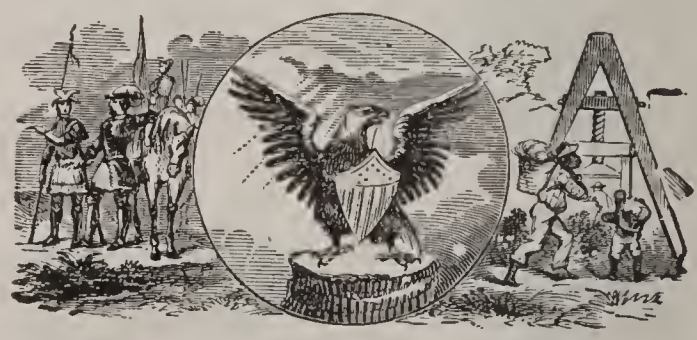
COAT-OF-ARMS OF OHIO.



COAT-OF-ARMS OF LOUISANA.



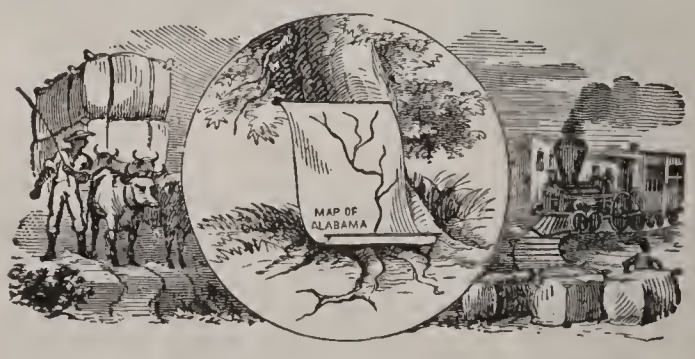
COAT-OF-ARMS OF INDIANA.



COAT-OF-ARMS OF MISSISSIPPI.



COAT-OF-ARMS OF ILLINOIS.



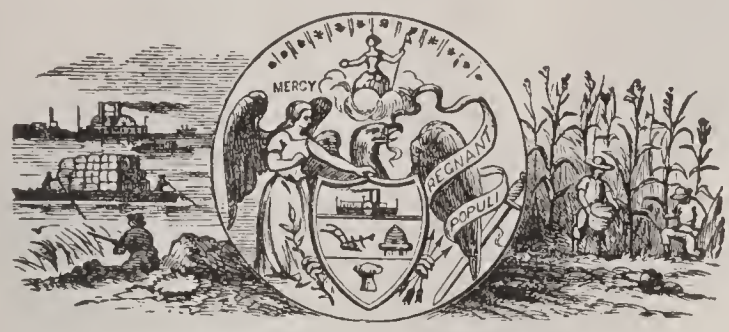
COAT-OF-ARMS OF ALABAMA.



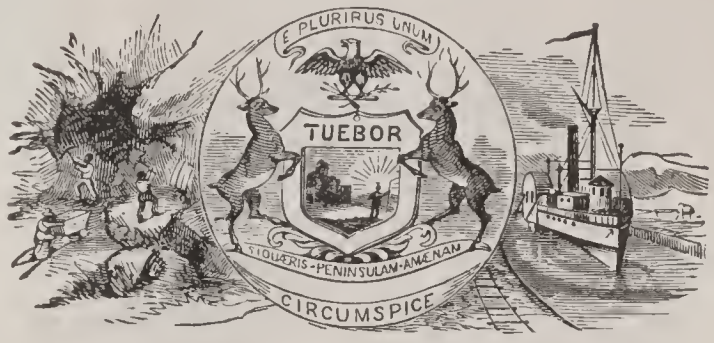
COAT-OF-ARMS OF MAINE.



COAT-OF-ARMS OF MISSOURI.



COAT-OF-ARMS OF ARKANSAS.



COAT-OF-ARMS OF MICHIGAN.



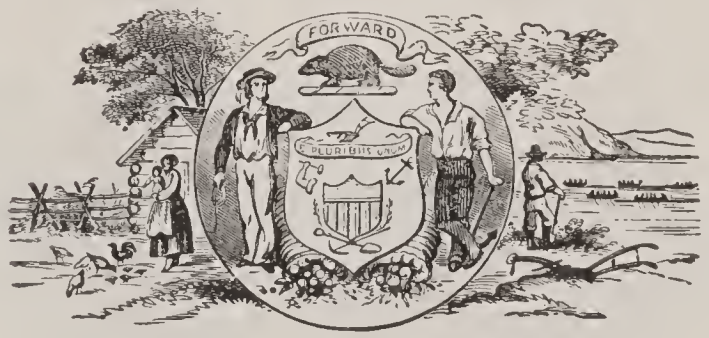
COAT-OF-ARMS OF IOWA.



COAT-OF-ARMS OF FLORIDA.



COAT-OF-ARMS OF TEXAS.



COAT-OF-ARMS OF WISCONSIN.



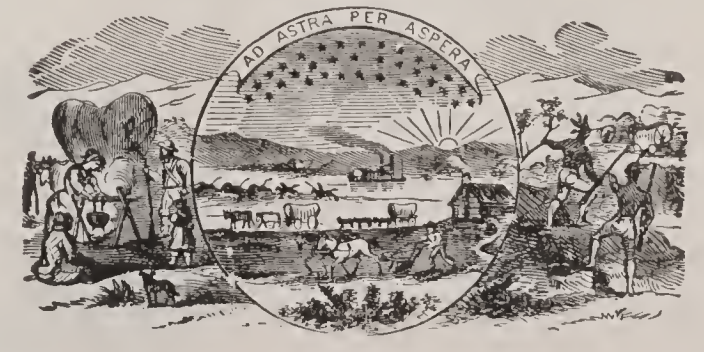
COAT-OF-ARMS OF CALIFORNIA.



COAT-OF-ARMS OF MINNESOTA.



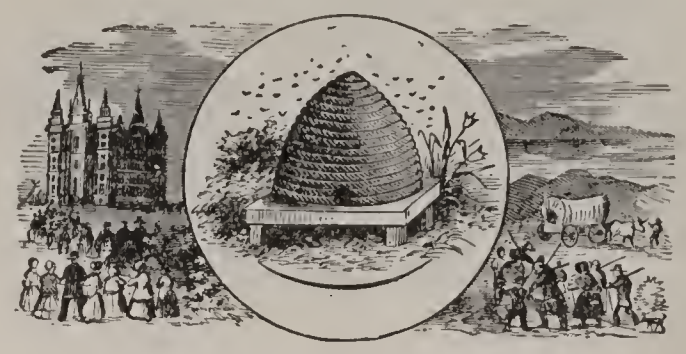
COAT-OF-ARMS OF OREGON.



COAT-OF-ARMS OF KANSAS.



COAT-OF-ARMS OF WEST VIRGINIA.



COAT-OF-ARMS OF UTAH.



COAT-OF-ARMS OF NEBRASKA.



COAT-OF-ARMS OF NEVADA.



COAT-OF-ARMS OF MONTANA.



COAT-OF-ARMS OF COLORADO.



COAT-OF-ARMS OF SOUTH DAKOTA.



COAT-OF-ARMS OF NORTH DAKOTA.



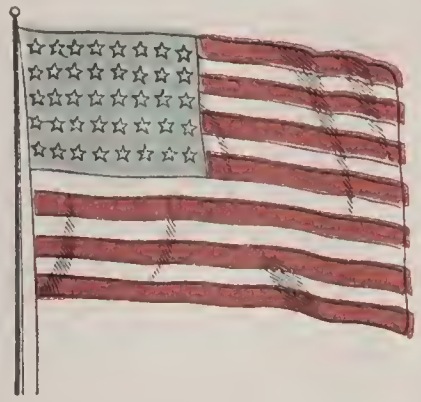
COAT-OF-ARMS OF IDAHO.



COAT-OF-ARMS OF WASHINGTON.



COAT-OF-ARMS OF WYOMING.



UNITED STATES.



UNION JACK.



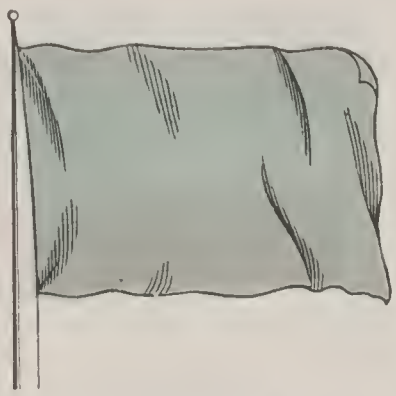
U. S. REVENUE.



U. S. COMMODORE PENNANT.



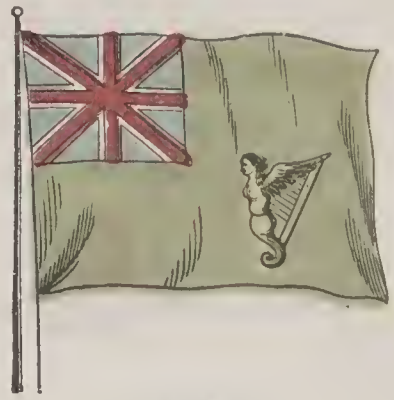
U. S. YACHT.



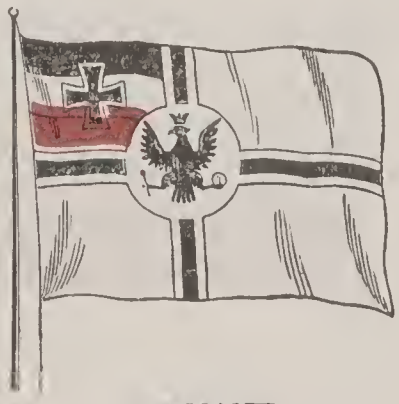
U. S. ADMIRAL.



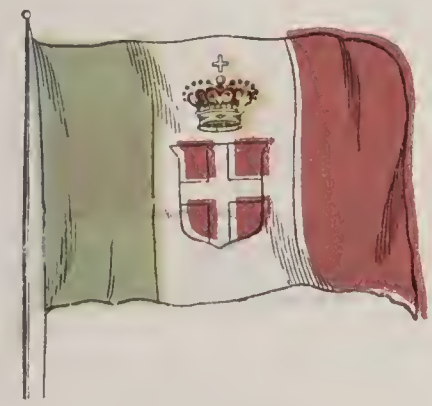
ENGLAND.



IRELAND.



GERMANY.



ITALY.



PENNSYLVANIA STATE.

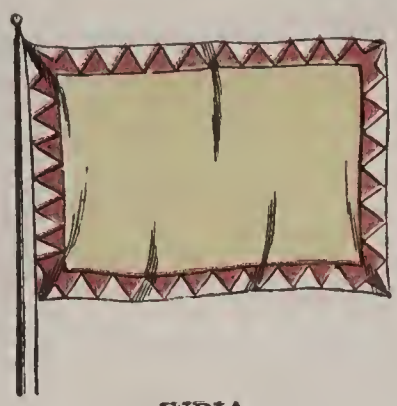


GERMAN MERCHANT.

FLAGS OF ALL NATIONS.



GREECE.



INDIA.



PERU.



VENEZUELA.



TURKEY.



PARAGUAY.



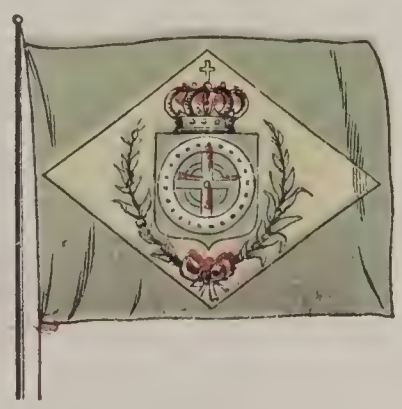
ECUADOR.



DENMARK.



RUSSIA.



BRAZIL.

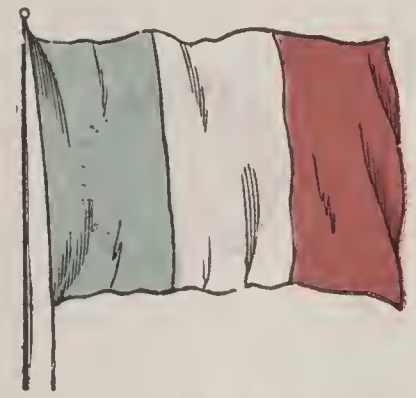


HANOVER.

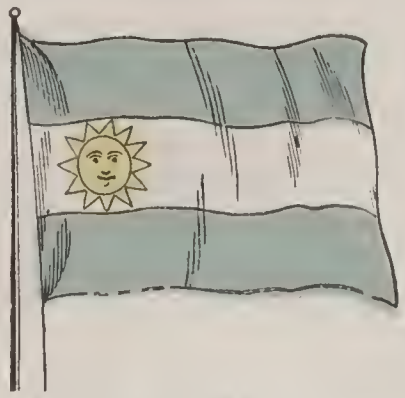


BOLIVIA.

FLAGS OF ALL NATIONS.



FRANCE.



ARGENTINE REPUBLIC.



SANDWICH ISLANDS.



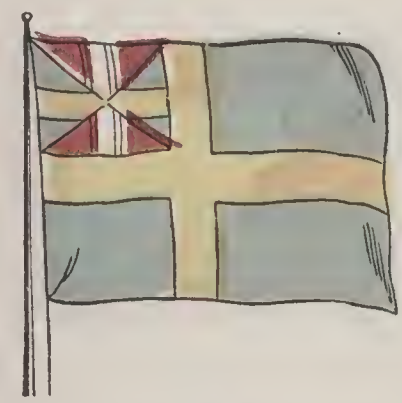
JAPAN.



PHILADELPHIA CITY.



HOLLAND.



SWEDEN.



LIBERIA.



AUSTRIA.



BELGIUM.

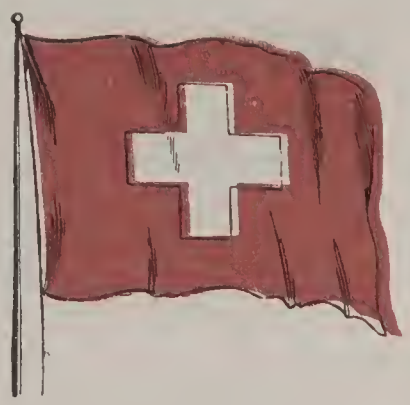


MEXICO.



EGYPT.

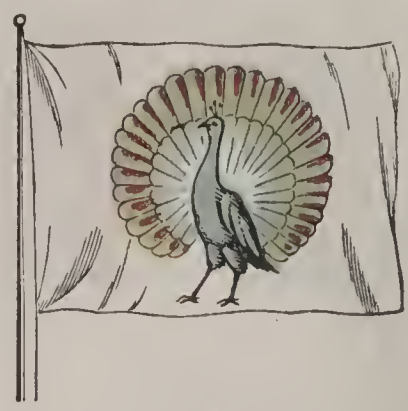
FLAGS OF ALL NATIONS.



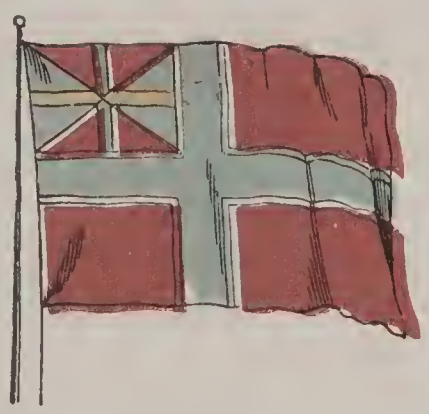
SWITZERLAND.



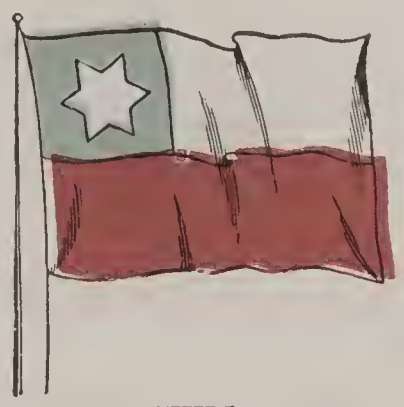
CHINA



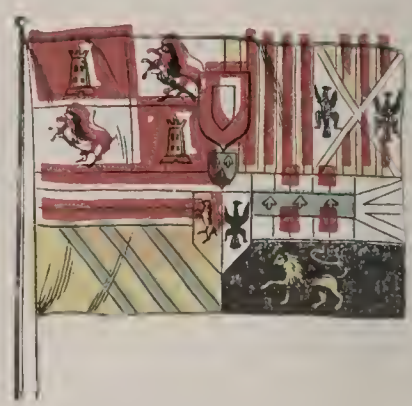
BURMAH.



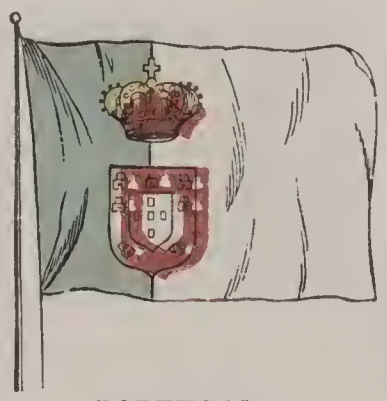
NORWAY.



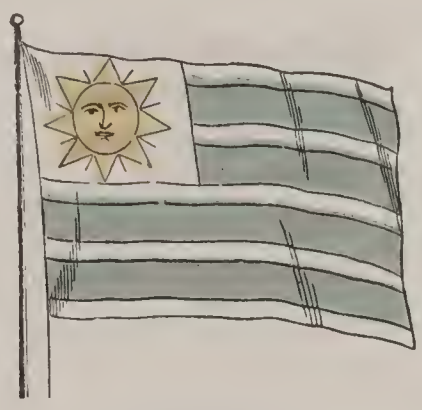
CHILI.



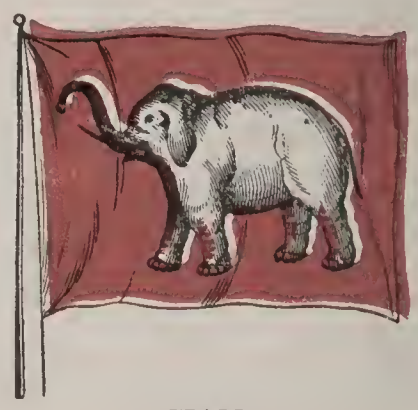
SPAIN.



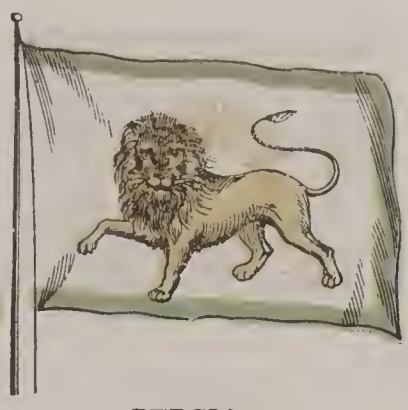
PORTUGAL.



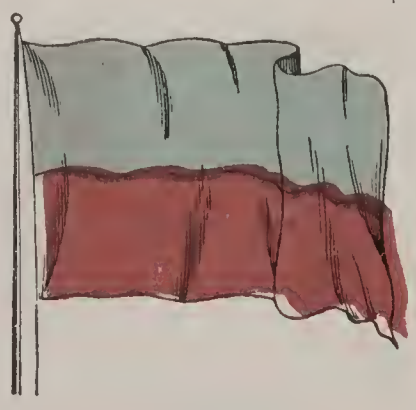
URUGUAY.



SIAM.



PERSIA.



HAYTI.



NEW GRANADA.

FLAGS OF ALL NATIONS.

THE DOMINION OF CANADA

IN 1534 Jacques Cartier, a French navigator, a native of St. Malo, set out from that port with two small vessels of twenty tons each, landed on the shores of Gaspe (now part of the province of Quebec), and took possession of the country in the name of his sovereign, Francis I. He went again in the following year (1535), passed up the gulf and river, which he named the St. Lawrence, and reached Stadacone, the site of the present city of Quebec. Continuing his voyage, he arrived at Hochelago, another Indian town, and gave it the name of Mont Royal, since corrupted into Montreal.

After passing the winter at Stadacone, he returned to France. But little or nothing was done to promote the colonization of the country until 1608, when Samuel de Champlain, a Frenchman of gentle birth, maritime and military experience, and much religious enthusiasm, visited Canada for the third time, with the object of extending Christianity and developing trade and commerce, and founded the city of Quebec, the name of which is said to be derived from an Indian word kebec, "the rock."

The control of the immense region, extending eastward to Acadia (Nova Scotia), westward to Lake Superior, and down the Mississippi as far as the Gulf of Mexico, was from this time until 1763 claimed by France. Recollet and Jesuit missionaries traversed it in all directions, suffering great hardships in their endeavors to convert the Indians. Their work was watched with much enthusiasm in France, and it is admitted that they were the first explorers of the country and the pioneers of civilization in the Far West.

The claims of France were not, however, undisputed, as is shown by the grant of a charter in 1670 by Charles II to Prince Rupert and his company, known ever since as the Hudson Bay Company of the exclusive right of trading in the territory watered by streams flowing into Hudson Bay. As already mentioned, they gave up their exclusive rights in 1869 on certain conditions, among others, a money payment of £300,000 and a large grant of land.

Long and Bitter Struggle.

The struggle between Great Britain and France for supremacy in North America was long and bitter, but it terminated finally in 1763 by the cession to the former under the Treaty of Paris of Canada with all its dependencies, except the Islands of St. Pierre and Miquelon, which were retained as fishing stations, not to be fortified or garrisoned. Hudson Bay with the adjacent territory, Nova Scotia and Newfoundland had been previously transferred to England by the Treaty of Utrecht in 1713. The population of Canada in 1763 was about 70,000, of Nova Scotia, 8000.

No time was lost in attempting to adapt British institutions to the new possession; but considerable friction occurred for some years, and it was not altogether allayed by the passing in 1774 of what is known as the Quebec Act. This gave the French-Cana-

dians the free exercise of their religion, and secured their civil rights, laws and customs. It annexed large territories to Quebec, including that part of the United States now forming Minnesota, Wisconsin, Michigan, Ohio, Indiana and Illinois, which passed from Great Britain in 1783.

Quebec was eventually in 1791 divided into Upper and Lower Canada; but this did not prove satisfactory in either province, leading to conflicts between the popular and elected assemblies and the nominated or official councils, and ultimately to the unsuccessful rebellion in 1837-38.

The representatives from each province in the united parliament were equal in number. Upper Canada, however, made greater progress than Lower Canada (the population in 1851 was 952,004 and 890,261 respectively, and in 1861, 1,396,061 and 1,111,566), and agitated for an additional number of members and claimed other concessions, but the demands were always opposed by the latter. The consequence was frequent legislative deadlocks and continual difficulties. Such was the state of things in 1864.

It is now necessary to refer to the other colonies on the Atlantic and Pacific coasts.



UNIVERSITY OF TORONTO.

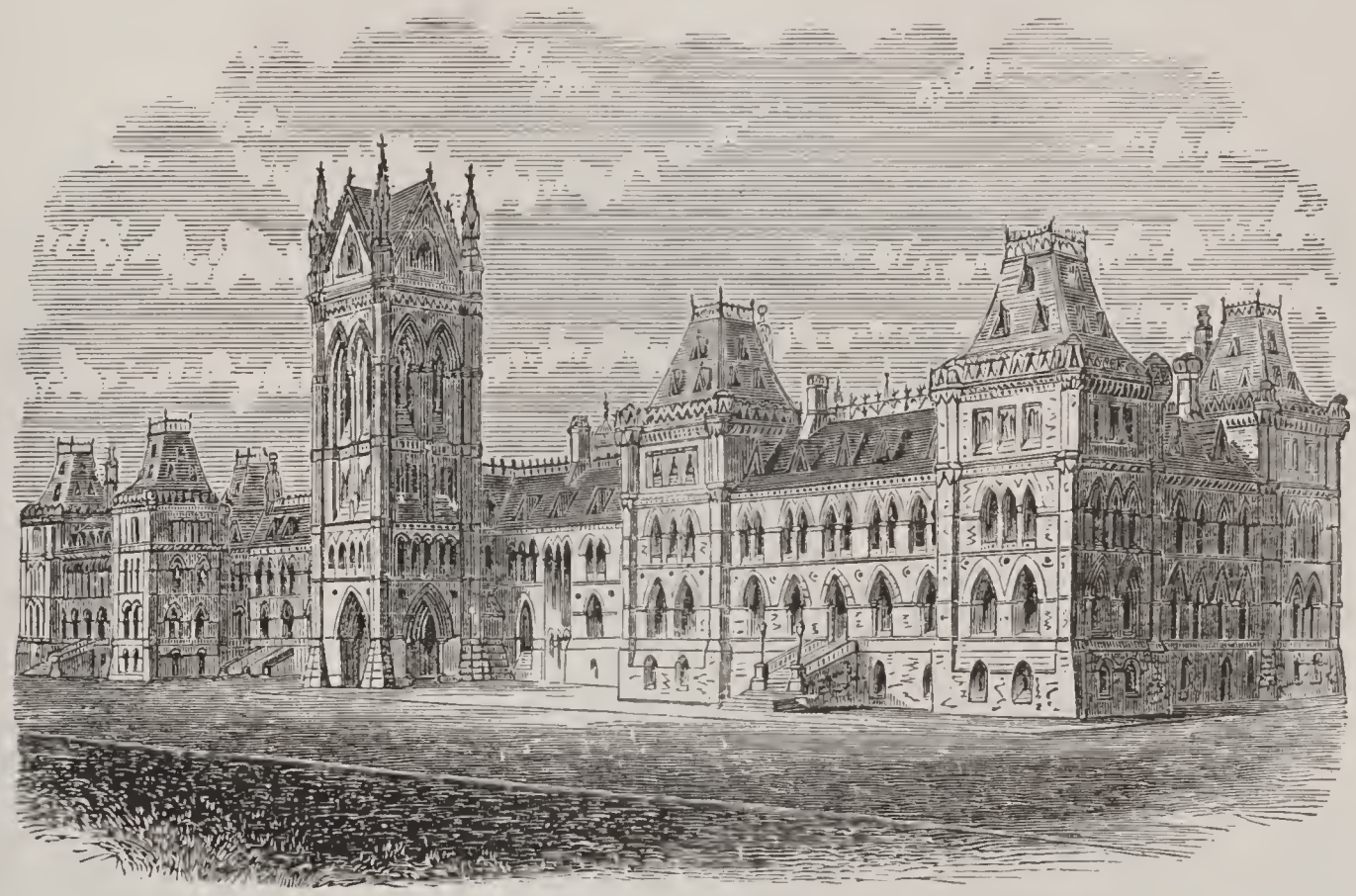
In accordance with Lord Durham's recommendations, the two provinces were reunited in 1840 (population of Upper Canada, 450,000; of Lower Canada, 650,000), but the union was not a success politically, although it indirectly led to the great confederation in 1867. It should be mentioned that the inhabitants of Upper Canada consisted largely of United Empire loyalists, who remained loyal to British institutions, and who left the United States at the close of the War of Independence, while those of Lower Canada were almost exclusively French-Canadians.

In 1770 St. John Island (renamed Prince Edward Island in 1780), and in 1784 New Brunswick, were formed out of Nova Scotia into separate colonies. In 1858, owing to the rush for gold and the influx of population, British Columbia was make a crown colony, and in 1866 Vancouver Island was joined to it. In 1864 the maritime provinces were discussing the desirability of local confederation, and advantage of the opportunity was taken by Canada to propose a broader scheme to cover all British North America, and after several confer-

ences a basis of union was agreed upon which resulted in the formation of the Dominion.

Since the confederation of the provinces, the chief events have been as follows: The Red River Rebellion, which collapsed in August, 1870; treaty of Washington, 1871, dealing with fisheries and the mutual use of certain canals; outbreak of half-breeds under Louis Riel in March, 1885, resulting in the speedy suppression of the rebellion and Riel's execution; and the treaty for the settlement of the fisheries dispute, signed by the British and corruption were made in Newfoundland during the same year and the ministry was compelled to resign, April 11. Much excitement was caused throughout the country on account of the Manitoba school question involving the sectarian issue; judgment was pronounced in favor of the minority, February 6, 1895. This was followed by a remedial order which was adopted by the Cabinet Council, March 19.

After a heated campaign the New Brunswick elections resulted in a complete victory for the government, by a vote of 35 to 8,



PARLIAMENT HOUSE, OTTAWA.

and United States representatives February 15, 1888. Sir John MacDonald died June 7, 1891, his funeral being attended by a vast concourse of people. In October the Dominion Government refused to acquiesce in the copyright treaty between England and the United States, claiming that the treaty was not international.

The voting in Ontario on the Prohibition Plebiscite resulted in a prohibition majority of 81,769. This was in 1894 and shows the widespread agitation at this time upon the question of temperance. Charges of bribery

October 17, 1895. Canada exports chiefly coal, gold, copper, iron, phosphates, salt, mineral oils and gypsum. Gold mines are worked in Nova Scotia and other parts of the country. The fisheries, as regards the area of water available, are the largest in the world. A bounty is offered by the government for the vessels making the largest catch. The canal and river improvements have cost large sums of money and are works of great utility and importance. English is generally spoken in the Dominion, but in some parts of the province of Quebec

French is the only language understood. In the Dominion, Quebec and Manitoba Parliaments, members may address the House in either language. In Quebec province the speeches are usually in French, which seems to retain a strong hold upon the people.

MEXICO

WHEN the Spaniards, under Cortez, commenced the conquest of Mexico in 1519, they found the native Indians far advanced in civilization, wealthy and hospitable. They had some knowledge of art and architecture, and some ideas of civilized life. They had an instinctive dread of the foreigners, and yet treated them with kindness. The country continued under the jurisdiction of a Spanish viceroy, until it declared itself independent in 1820, and has so continued to the present time.

In 1825 a treaty of commerce was formed with Great Britain. The expulsion of the Spaniards was decreed in 1829, and a Spanish expedition against Mexico was unsuccessful. On the 11th of May, 1833, after a revolution such as have been common in Mexico, Santa Ann was made President. This resulted in the independence of Mexico,



ENTRY OF THE FRENCH INTO THE CITY OF MEXICO.

which was recognized by Brazil in 1830 and by Spain in 1836.

In 1845 occurred the war between Mexico and the United States respecting the possession of Texas, and the Americans having been victorious, a treaty of peace was ratified May 19, 1848. Since this time there has been no rupture of peaceful relations between the two countries.

In 1863 an assembly of notables at the city of Mexico decided on the establishment of a limited hereditary monarchy, with a Roman Catholic Prince as Emperor, and offered the crown to the Achduke Maximilian of Austria. The attempt, aided by the French, proved unsuccessful, and after a condition amounting to civil war, the Republican element of Mexico was successful, and Maximilian was seized and shot, June 19, 1867. The city of Mexico which was held by the monarchial party was taken by the opposing forces after a siege of sixty-seven days, and the Republic was re-established.

During the same year the Mexican Congress assembled, Jaurez acting as provisional president; he was re-elected in December of the same year. A series of insurrections followed through the efforts of different parties to obtain control of the government. The insurgent Diaz defeated the government troops, entered the city of Mexico and assumed power as provisional president in November, 1876. Diaz retained the presidency of the Republic, and continued his administration.

Mexico is rich in mines and is a large exporter of coffee and tobacco. In addition to these, the chief agricultural products are maize, barley, wheat, beans, cotton, sugar cane, rice, cocoa and vanilla. Large numbers of cattle are reared in Mexico for the United States and other countries.

ENGLAND

IT is a well-known fact of history that the western part of England was known to the Phœnicians, and was resorted to by them for its tin, about four centuries B. C.; hence the whole country received the name of the *Cassiterrides* ("Tin Islands"). When invaded by Cæsar, B. C. 55, it was called *Britain*, or sometimes *Albion*. The Romans subdued all England, and some parts of Scotland and Wales, but did not reach Ireland, though its existence was known to them.

In the third century of the Christian era, adventurers from the opposite coasts of Germany settled in various parts, and joined with the Britons in forcing the Romans to abandon the Island, A. D. 410, after a rule of about 400 years, traces of which still remain in every quarter. The Britons, being divided into as many hostile states as they had cities, were unable to resist the fresh hordes (now called *Saxons* and *Angles*) that poured into the island, and about 459 the kingdom of Kent was founded.

The Britons still fought stubbornly, but

were gradually driven westward, and by the year 584 the kingdom of Mercia was established, being the last of the seven kingdoms founded by the invaders, whence the name of the *Heptarchy*. In 827, Egbert, king of Wessex, obtained the supremacy over his rivals, and declared himself King of England.



BATTLE OF HASTINGS—DEATH OF HAROLD.

His descendants, of whom Alfred the Great was the most illustrious, held the throne for more than 200 years, but the country suffered greatly during the time from the ravages of the Danes, who, under Canute and his sons, became its ruler for 25 years (1017–1042). The Saxon line was restored in the person of Edward the Confessor, to whom Harold succeeded; but his death in the battle of Hastings, 1066, gave England into the hands of the Norman kings, who reigned from 1066 to 1154.

Then came the Plantagenets (1154–1485); the Tudors (1485–1603); and the Stuarts (1603–1714), to whom the House of Brunswick succeeded on the death of Queen Anne. The conquest of Ireland was begun in the year 1170, but can hardly be regarded as completed till the surrender of Limerick in 1691. Wales was conquered by Edward I. in 1282, and formally annexed to England by Henry VIII. in 1536.

Alliance with France.

Scotland successfully resisted the efforts of Edward I. to subjugate it, maintained for ages a close alliance with France, and in 1603 gave a ruler to England in the person of James VI., who became James I. of Great Britain, a title then first assumed. This was but a personal union, but the political union of the two kingdoms was effected under Queen Anne in 1707. Ireland which had been hitherto only styled a lordship, was declared a kingdom in 1542, and this kingdom declared a member of the triple monarchy of Great Britain and Ireland by the Act of Union, 1801.

Early in the present century there was a determined and successful effort by the Irish Catholics to obtain religious emancipation. At length the leaders of the Whig party made common cause with the classes hitherto excluded from government, and backed at once by the traders and artisans, forced upon an unwilling Parliament the Great Reform Bill of 1832, which marked an important epoch in English history.

From this time there has been a marked change both in the position of England and in the character of the questions which have excited public interest. Still mistress of the sea, and possessed through its colonies of an empire distributed in every corner of the globe, England has found enough to do in the preservation and improvement of this gigantic dominion, and has as far as possible abstained from interference in continental quarrels.

Vast Power and Influence.

Once and again it has shown its influence. In 1848, the year of revolutions, and in the subsequent consolidation of Italy, its sympathies were not hidden, but there was no thought of active interference. It allowed the great American Republic to settle its disputes uninterrupted, save by sympathy at first shown to the South. It adopted the same attitude of non-intervention in the Prussian wars against Denmark, against Austria and against France. It has only been in questions which seemed to touch the safety of its eastern empire that it has drawn the sword.

The Crimean War was avowedly for the maintenance of Turkey as a check upon Russia, which was threatening the road to India. Of the same class have been the wars in Egypt and Afghanistan. Still more directly when India itself burst into insurrection was England called upon to interfere and engage in the victorious but terrible campaigns which marked the suppression of the mutiny. The other wars, and they are not few, have all been connected with mercantile and colonial interests. The questions which have chiefly moved men's minds have been of a social or mercantile character.

The extension of the electoral franchise, the reform of municipalities, the repeal of the corn laws, the establishment of free trade, the improvement of the condition of the working classes, the regulation of strikes and trades-unions, a national system of education, and of late years the question of the managment of Ireland, have been the points round which political interest has centred. They are the fitting questions to occupy a democracy. To that phase of political life in one way or other England is fast hastening.

It has still to be seen whether under such conditions means will be found to keep together those colonies which are already to all intents and purposes independent, and to preserve to the empire the magnificent position which the gradual development of physical and political forces has secured.

Table of Kings and Queens of England.

NORMAN LINE.

	Began to Reign.
William I.	October 14, 1066
William II	September 9, 1087
Henry I.	August 2, 1100
Stephen	December 2, 1135

FAMILY OF PLANTAGENET.

Henry II.	October 25, 1154
Richard I.	July 6, 1189
John	April 6, 1199
Henry III.	October 19, 1216
Edward I.	November 16, 1272
Edward II.	July 7, 1307
Edward III.	January 24, 1326
Richard II.	June 21, 1377

HOUSE OF LANCASTER.

Henry IV.	September 29, 1399
Henry V.	March 23, 1413
Henry VI.	August 31, 1422

HOUSE OF YORK.

Edward IV.	March 1, 1461
Edward V.	April 9, 1483
Richard III.	June 22, 1483

YORK AND LANCASTER UNITED IN THE HOUSE OF TUDOR.

Henry VII. of Lan.	August 22, 1485
Henry VIII.	April 22, 1509

Edward VI.....January 28, 1547
Mary I.....July 6, 1553
Elizabeth.....November 17, 1558

HOUSE OF STUART.

James I.....March 24, 1603
Charles I.....March 27, 1625
[THE COMMONWEALTH FROM 1649 TO 1660, CROMWELL, PROTECTOR.]
Charles II.....January 30, 1660
James II.....February 6, 1685
William and Mary.....February 13, 1689
William alone.....from December 28, 1694
Anne.....March 8, 1702

BRUNSWICK FAMILY.

George I.....August 1, 1714
George II.....June 11, 1727
George III.....October 25, 1760
George IV.....January 29, 1820
William IV.....June 26, 1830
Victoria.....June 20, 1837

SCOTLAND

FROM historic records it appears that the first inhabitants of Scotland were Celts, and probably were the same as the early Britons, Welsh and Irish. They defended themselves against the Romans, who could never subdue the people of the Highlands. They were so troublesome that the Roman generals caused a wall to be built from the Solway Firth to the river Tyne.

Thus the Scots were shut up in their own country, like a herd of unruly cattle; but they contrived to get over the wall pretty often. In three or four hundred years after Christ a tribe of Goths, called Picts, came over from the continent and settled in the country. These inhabited the Lowlands, and lived by agriculture. The Scots dwelt in the mountains, carrying on war, and subsisting by the chase.

Thus the nation become divided into Highlanders and Lowlanders, and thus, to some extent, the people remain to this day. They live peaceably now, but in early days they quarreled fiercely. In 839, it is said that Kenneth II., who was a Highland leader, subdued the Picts, and became first king of all Scotland. From this time to Edward I. of England, there was a constant change of sovereigns. Edward Longshanks, the same that subdued Wales, made war upon the Scotch, imprisoned Wallace, and had prepared a great army for the final subjugation of Scotland, when he died. Edward II., was beaten by Robert Bruce at the glorious battle of Bannockburn. This event occurred in 1313, and secured the freedom of Scotland, which had been threatened by the English kings.

Incessant Warfare.

From this time the history of Scotland tells of little but civil wars and bloody battles with England, till the time of James V. He assumed the reins of government in 1513, at the age of eighteen months. He afterwards lost the confidence of his army, and they deserted him in the hour of need. This broke his heart, and he starved himself to death in 1542 at the age of thirty-one.

His daughter was the beautiful and un-

fortunate Mary Queen of Scots, as she is called, and who was educated in France, and was not only very handsome, but very accomplished. While she was yet a young lady she was taken to Scotland and became queen. But beauty, accomplishments and power, cannot insure happiness. Mary's kingdom was in a state of great trouble; the people were divided among themselves, and Mary found it impossible to govern them. At length she became afraid that they would kill her, and, to save her life, she went to England and placed herself under the protection of Elizabeth, who caused her to be put in prison, and finally took her life, thus ending her many misfortunes.

The son of Mary, James VI. of Scotland, succeeded his mother, and after the death of Elizabeth he became King of England also, under the title of James I. Though he lived in England he did not forget Scotland. He loved learning and caused schools to be established in his native country. These schools are continued to this day, and therefore it is very uncommon to meet with a Scotchman who is wholly uneducated.

From the time of King James, in 1603, Scotland has been attached to the British crown. She has sometimes rebelled, and in the cause of the Stuarts she fought a good many battles. But Scotland has long been a peaceful portion of the British kingdom.

IRELAND

THE origin of the ancient Irish race is involved in much obscurity; ethnologists, however, generally agree in describing it as belonging to the old Brito-Celtic stock. Under the name of *Scoti*, they became known to the Romans by their incursions upon Britain. In the third century A. D., through the supposed influence of St. Patrick, the natives of the island became Christianized, and by the sixth, learning and civilization had become largely diffused throughout its limits.

In 1014 A. D., the Danish invaders were overthrown by King Brian Boru in the battle of Clontarf. In 1155, Pope Adrian IV. granted Ireland, by special bull, to Henry II. of England, and the island received shortly afterward a permanent English colonization. In 1210 King John granted a Charter to the Irish, which received confirmation at the hands of his son, Henry III.

In the sixteenth century, Henry VIII. introduced the Reformed Faith, and assumed the title of *King of Ireland*. Under James I. the province of Ulster received a large immigration of Scottish and English settlers, who introduced Presbyterianism. In 1641, the Catholic population raised a formidable revolt against the English Protestants, 40,000 of whom were killed in Ulster alone.

Anarchy continued to prevail till 1649, when the English republican, Cromwell, crushed it out with a hand of iron. In 1688, the Irish people—except the Ulster Protest-

ants—espoused the cause of James II.—a cause extinguished by the defeats of Boyne and Aughrim.

In 1798, the Irish Catholics again rose in revolt, and received some trifling aid from France; this insurrection ended in their being more firmly riveted to England than before. In 1800, the Irish Parliament voted the legislative union of Ireland with England; in 1829, the Catholic Emancipation Bill passed the Imperial Parliament; in 1848, a so-called "manifesto" of the "Young Ireland party" provoked an unsuccessful attempt at insurrection under William Smith O'Brien and others; and since then the *Fenians, Home Rulers, Land Leaguers* and other modern partisans of Irish Independence have been a cause of anxiety and trouble to the British Government.

The government is semi-independent, an English viceroy, under the title of *Lord Lieutenant,* holding almost regal sway. The Roman Catholic is the prevailing form of religion, excepting in Ulster, in which province Presbyterianism is largely in the ascendant. In 1870, the Anglican Church in Ireland, heretofore based on a similar foundation to that which it holds in the sister-kingdom, was disestablished by Act of Parliament, and all churches therefore made self-supporting.

Ireland is well supplied with educational institutions, having three universities—those of Trinity College, Dublin (Protestant), Maynooth (Roman Catholic), and the Queen's University—besides a large number of endowed schools, and an admirable system of mixed schools where children of all denominations may be taught. The legal executive is similar to that of England.

FRANCE

BEFORE the time of Cæsar, the whole of France was known to the Romans under the name of *Transalpine Gaul;* but after its conquest it was divided into the four provinces of *Provincia Romanorum* (Provence), *Gallia, Aquitanica, Celtica* and *Belgica.* In the fifth century the Germanic nations began to pour in an irresistible torrent over Gaul; but the Franks, in course of time, absorbed all the other tribes of that country, and Pharamond, their chief, in 420, is considered the founder of the French monarchy.

In 751 the Carlovingian dynasty, commenced in the person of Pepin le Bref, was carried to the zenith of its power and glory by Charlemagne, 768-814, and ended with Louis V. in 987. The Capetian race gave fifteen kings to France, beginning with Hugh Capet and ending with Charles V., 1328.

The house of Valois ruled France under thirteen kings, beginning with Philip VI. and ending with Henri III., 1589. In that year Henri IV. inaugurated the House of Bourbon. Louis XIII. succeeded in 1610; Louis XIV. in 1643; Louis XV. in 1715; and Louis XVI. in 1774.

In 1789, broke out that tremendous revolution which cost Louis XVI. his crown and head (1793), destroyed every vestige of the previous government and institutions, and inaugurated an era of periodical convulsions, which, unhappily for this country does not yet seem to have terminated.

Downfall of Napoleon.

The power was successively held by the Convention, 1792; the Directory, 1795; the Consulate, 1799; Napoleon I., who caused himself to be crowned emperor, 1804, and whose downfall dates from the great battle of Waterloo, 1815; Louis XVIII., the representative of the House of Bourbon, who was then restored to the throne by the aid of the Allied Powers; Charles X., who succeeded the latter in 1824; Louis Philippe I., of the Orleans branch of the Bourbons, who was raised to the throne after the revolution of July, 1830; the Second Republic, inaugurated after the overthrow of the last-named monarch in 1848; and Napoleon III., who, after the *coup d'etat* of 1851, was elected emperor.

In July, 1870, the latter declared war against Prussia; his armies were defeated in several battles, and himself compelled to surrender to the victorious enemy after the decisive battle gained by them before Sedan in September; and his dethronement was decreed by the French Assembly. The war was then unsuccessfully renewed by the Republican Government of National Defence; Paris, besieged by the Germans, resisted heroically its invaders for several months, but on the eve of being obliged to capitulate by sheer starvation, negotiations were entered into which resulted, in February, 1871, in a disastrous treaty of peace with Germany, by which France lost the portions of her territory included in Alsace-Lorraine, and had also to pay the enormous sum of $1,000,000,000 by way of indemnity, which indemnity, however, was paid in full much in advance of the stipulated period.

In March, 1871, a revolt broke out in Paris, headed by the leaders of the extreme Republican party, in conjunction with the Socialists. Under the name of the *Commune*, they inaugurated a dictatorial power in the French capital, and resisted the authority of the National Assembly; hence necessitating a second siege, more calamitous than the first

Presidents of the Republic.

On August 31, 1871, M. Louis Adolphe Thiers was nominated by the National Assembly President of the French Republic. In 1873 (May 24) he was suceeeded by Marshal MacMahon, and in 1879 by M. Grévy, who resigned in 1887, and was succeeded by M. Carnot.

On the 23d of June, 1894, President Carnot was assassinated at Lyons by an Anarchist. M. Cassimer Perier was elected President June 27th by the National Assembly. In January, 1895, he resigned his office and determined to retire to private life. On the 17th of the same month the Assembly elected as his successor, M. François Felix Faure.

France is notably an agricultural country. The high development of nursery-gardening has achieved most remarkable results in variety and richness of crops. It may suffice to say that, owing to their perfect methods of horticulture, the farmers around Paris and other large cities succeed in obtaining vegetables and fruit to the value of from $300 to $800 per acre. The planting of trees and the reclamation of unproductive soil go on in various parts of France on a large scale. Special interest is taken in cattle-raising, and

fine breeds of horses are reared in the North and Northwest. In some parts of the country wool-growing is an extensive industry. The exports of cattle, butter, eggs, cheese and poultry, especially to England, are very considerable—no less than 70,000,000 pounds of butter and 1,000,000,000 eggs being sent every year across the channel.

France is very rich in all kinds of building stone, gravel, chalk and plaster, and this circumstance has permitted her to build most of her cities of excellent stone.

THE GERMAN EMPIRE

FROM all that can be collected of the early history of Germany (called *Germania* by the Romans), it appears to have been divided into many petty nations and principalities, many of which frequently united under one head or general, both in their offensive and defensive wars. The Germans maintained a long and aggressive warfare against the Romans, but were at length kept in check by Germanicus.

The Romans, nevertheless, prudently contented themselves by making the Rhine and the Danube the boundaries of their conquests ; they accordingly built fortresses on the banks of both those rivers, to prevent the incursions of what they termed the barbarous nations ; but within about a century after Constantine the Great, the Franks, Burgundians, Alemanni, and other German nations, broke through those boundaries, and dispossessed the Romans of all Gaul, Rhætia and Noricum, which they shared among themselves ; but the Franks prevailing over the rest, at length established their empire over all modern Germany, France and Italy, under the conduct of Charlemagne.

At the demise of this great monarch, Germany became again dissolved into constituent states until 843, when the kingdom of Germany arose under the sovereignty of Louis le Debonnaire. After being governed by the Carlovingians till 887, the monarchy became elective in 911, in the person of Conrad I., Duke of Franconia ; a Saxon dynasty succeeded in 918, and afterward resuscitated the empire under Otho the Great, under the title of the *Holy Roman Empire of the German Nation.*

The Throne at Last Established.

Under the Suabian dynasty, 1138-1190, the imperial power attained its zenith. Then came the aggressions of the Popes, the feuds of the great vassals of the crown, and the state of anarchy consequent upon the struggle between the Guelphs and the Ghibellines, succeeded by an interregnum lasting from 1254 to 1273. In the latter year the empire became reconsolidated by Rudolph of Hapsburg, and the throne first placed upon a firm basis.

In 1438, the House of Austria commenced its long career as Emperor of Germany, and reached its acme of power and prosperity under Charles V. and his immediate successors. The Thirty Years' War, 1618–48, then supervened to disintegrate the empire, establish the Lutheran religion, and give to France the political ascendancy on the continent of Europe. For several



A BICYCLE PICNIC PARTY



CHARLEMAGNE AND HIS NOBLES.

after generations, wars with the last-named power culminated, in 1740, in the War of the Austrian Succession, which raised the House of Lorraine to the imperial throne in the person of Francis I.

At length, in 1804, the ancient German empire came to an end, beneath the blows of Napoleon I., by the abdication of Francis II., who, retaining only his hereditary territories, became the first Emperor of Austria. Ages anterior to this consummation, Germany had been politically transformed (so to speak) by the great princes, vassals of the empire, into a semi-independent confederacy of petty states, represented in the diets. The free cities also shared in the distribution of political power, and finally resolved themselves into the Hanseatic League.

The Historic Ten Circles.

Prior to the French Revolution, 1789, the empire had become politically distributed into ten *circles*, each circle embracing the states of one or more powers—regal, ducal, electoral, ecclesiastical or municipal. The provincial diets of these circles were subject (at all events nominally) to the imperial diet convened and presided over by the emperors.

In 1805, Napoleon I., in pursuance of his designs for the disintegration of the German power as a unity, enlisted on his side certain of the circles and electoral powers, which he combined into a body called the *Confederation of the Rhine*. He also created for his brother Joseph a kingdom out of the Lower Rhine provinces, under the name of Westphalia. In 1809, too, he succeeded in absorbing into the French Empire the seaboard provinces of the old regime, and divided them into departments after the French manner. In 1813, however, the *Liberation War* broke out, and terminated in the redemption of the country, and the expulsion of the foreign invaders.

The Congress of Vienna, 1815, divided Germany into thirty-nine sovereign states; which number became by various after causes reduced to thirty-four, at which it stood prior to the Austro-Prussian war of 1866, which eliminated Hanover and several other secondary states from the German political map, and extinguished Austrian influence in Germany proper. Prussia hence became the one recognized ruling power in that country, and assumed the leadership of the states of North Germany, united under the title of the *North German Confederation*.

Grand Military Alliance.

In addition, she further increased her political influence, or rather preponderance, by entering into treaties with the South German powers of Bavaria, Würtemberg and Baden, providing for a strict international military alliance—offensive and defensive—and the placing of the armies of those powers at the disposal of the German nation, as represented by Prussia, in time of war. The practical results of this wise and astute policy bore fruit in the achievements of the united German armies in the campaign against France, 1870–1: and the restoration of national unity, in the rehabilitation of the Germanic Empire of Barbarossa and Charles V. in the person of William I., King of Prussia.

In 1888, a serious illness of Emperor William resulted fatally, March 9th, and his son, Prince Frederick III., came to the throne. His death followed on June 15th, and he was succeeded by his son, Emperor William II. On April 24, 1895, the German Government, in connection with Russia and France, protested against the acquisition of Chinese territory by Japan. On June 19th, the opening of the Baltic Canal was celebrated

by the Germans with the warships of all maritime nations as guests. The occasion called forth congratulations for Germany from many other governments whose representatives participated in the festivities, and was regarded as a peaceful demonstration intended to afford opportunity for the European nations to express their good will.

AUSTRO-HUNGARIAN EMPIRE

TOWARDS the close of the 8th century the Emperor Charlemagne founded a jurisdiction in Lower Austria, which became a duchy in 1156 and an arch-duchy 300 years later. In 1564, Maximillian II., son of the great Emperor Charles V., became Emperor, with Austria, Hungary and Bohemia for his possessions. But many years elapsed before the whole of Austria was united under one government.

In the 18th century it attained rank as one of the great powers of Europe, and up to a recent date its influence was all-powerful in Germany. Until 1806 its rulers bore the title of Emperor of the Romans, but in that year the Emperor Francis renounced that title and became the first Emperor of Austria. From 1806 to 1813 Austria was menaced by the ambitious Napoleon, but made such bitter armed patriotic resistance to the inroads of this almost invincible warrior, that the French victories were shorn of much of their glory. The peace of Vienna (October 14, 1809) took from Austria large possessions.

But these were restored by the Congress of Vienna (1815) after the defeat of Napoleon at Waterloo, together with Lombardy and Venice, the Illyrian provinces, Dalmatia and the Tyrol. The close of the reign of Francis I. was marked by several insurrections amongst the Italian provinces, and it was with the utmost difficulty that the confederation was maintained. The Emperor died in 1835, and was succeeded by his son, Ferdinand I., a weak-minded prince, who entrusted the government almost entirely to Metternich. The French Revolution (1848) caused the Austrian Empire to totter to its foundations. The revolutionary spirit manifested itself everywhere, resulting in the abdication of the Emperor in December, and the imperial honors were conferred upon his nephew, Francis Joseph.

The Two Months' War.

In 1859 diplomatic complications led to a rupture of relations with France, which was followed by warfare, for two months, until in July the two Emperors, Napoleon III. and Francis Joseph, consummated the peace of Villafranca, Austria giving up Lombardy, Italy to be formed into a confederation under the presidency of the Pope, and Modena and Tuscany to be restored to their princes. The first constitution of Austria was promulgated in 1860, followed by a patent in 1861, which formed the basis of a charter that went into effect in 1867, with certain modifications rendered necessary by the recognition of Hungary's independence. In 1864 Austria joined Prussia in hostilities

upon the Danish duchies of Schleswig, Holstein and Lauenburg, and the war terminated in their acquisition.

But Austria speedily suffered terrible retribution for the part she had taken in the affair, the difficulty in disposition of the provinces bringing on war with her former ally. The Italians acted in concert with Prussia in hostilities upon Austria, and what is called the Seven Days' War ended in the Prussian victory at Königgratz, which led to peace negotiations at Prague, where a treaty was signed August 23d.

By this treaty Austria was shorn of Venetia and the fortresses of the quadrilateral, the dissolution of the German Confederation was recognized, all claim to Holstein and Schleswig was given up, and an indemnity of 20,000,000 thalers paid. Home affairs then claimed the attention of the Emperor. The necessity of self-government for Hungary was recognized, and on June 8, 1867, Francis Joseph was crowned King of Hungary, in addition to his title as Emperor of Austria.

A treaty of alliance with Germany and Italy was signed March 13, 1887. This was followed by a defensive treaty with Germany against Russian or other aggressions, October 7, 1879. Archduke Rudolph, heir to the throne, committed suicide January 30, 1889. In December, 1893, a commercial treaty was formed with Spain.

THE RUSSIAN EMPIRE.

HISTORY records the fact that the Scythians and Sarmatians of the country bordering on the Don and Dnieper, were known to the Greeks and Romans of old, as they are mentioned hy Herodotus, Strabo and Tacitus. In the earlier centuries of the Christian era successive invasions of Goths, Huns, and other warlike peoples swept over the land, and either drove out or absorbed the native inhabitants. At this point we find the first mention of the Slavs, who drove the scattered Finnish tribes to the far north and became the founders of the Russian people and government. There stands in Novgorod a splendid monument which was erected in 1862 on the millennial anniversary of the foundation of the Russian Empire by Ruric the Norman.

But for many centuries the country was divided into practically independent provinces, some of which retained their autonomy up to a very recent period. The empire was divided and again united; it was broken into four parts; became a confederacy, and again, under Ivan III. (1462–1505), became a nation.

Christianity was introduced about the year 950, and two centuries later the greater part of the empire was overrun by the Mongols. From 1380 to 1470 tribute was paid to the Tartars, but Ivan the Great broke their power and his son and successor, Ivan the Terrible, contributed much to the greatness of Russia.

Under Peter the Great, the fourth monarch of the Romanoff dynasty, Russia emerged from barbarism, the boyars (noblemen) lost their influence, and the country assumed



MAP OF THE WORLD

On Mercator's Projection

Longitude from Greenwich 60 — 20 — 0 — 20 — 60 — East 100

Longitude from Washington 17 — 57 — 97 — 137 — East 177

Lat. 80 — 60 — 40 — 20 — 0 — 20 — 40 — 60



CATHARINE THE GREAT AT THE HEAD OF HER ARMY.

the position which it has ever since retained as a leading member of the European family of nations. Since the time of Peter its national policy has been directed to the acquirement of additional European and Asiatic territory, and every reign has seen vast possessions added to this already enormous power.

Russia become involved in the general European wars of the first fifteen years of this century, and destroyed its most renowned city, Moscow, that it might not afford shelter to the hated invader, Napoleon. All efforts of the various nations which have at one time or another been absorbed by Russia to regain their independence have been barren of results; she never gives anything back.

Russia's Onward March.

Although her schemes of aggrandizement on the Black Sea were temporarily checked by the war of 1854–55, in which England, France and Sardinia supported the Ottoman Empire, Russia has since made greater strides east and south, and has almost attained her chief aim, the full and unrestricted control of the Black Sea. She presses England upon the line of the Himalayas, and China finds its great wall an insufficient defence against the disciplined legions of this great power.

Properly speaking, Russia is an Asiatic power with great possessions in Europe rather than a European power with subject provinces in Asia, and its march has been and continues to be in a directly opposite line to the ordinary movement of population and empire, which is westward.

There was much domestic disturbance in Russia during the years 1891 and 1892, in the former of which the country was distressed by poor harvests and famine in some localities, while in the latter year cholera carried off a quarter of a million persons. On November 1, 1894, occurred the death of Czar Alexander III. at Livadia, aged 49. Notwithstanding this recent death in the royal family, on the 26th of the same month, Czar Nicholas II. wedded the Princess Alix of Hesse-Darmstadt.

Her Power Felt Everywhere.

For a long time the influence of Russia has been paramount in the politics of eastern Europe and some parts of Asia. No sooner had Japan gained her brilliant victory over China in 1894 than the power of Russia began to manifest itself in the settlement of the terms demanded by the Japanese Government. In the early part of 1896 the same strong influence was brought to bear upon the Turkish question, which then was agitating the world on account of the Armenian Massacres, putting an effectual check upon English diplomacy.

The public income of Russia for 1895 was estimated at 1,214,378,030 roubles, having almost doubled since 1883. The internal taxes are collected in paper, but much of the customs dues are paid in gold. The value of the paper rouble is about fifty cents in our money, while the gold rouble is valued at about seventy-seven cents. But as only about one-tenth of the revenue is from customs, it is safe to put the yearly income of the government at a little over $600,000,000.

The exports of Russia to foreign countries consist principally of corn, flour, butter, eggs, flax, timber, linseed, raw wool and illuminating oils. The chief industrial centres are Moscow and the surrounding governments, St. Petersburg and Poland. The woolen trade is taking firm root in the South, chiefly through English capital and enterprise. The domestic industries carried on along with

agriculture are of great importance and a source of livelihood to vast numbers of the peasantry. The empire is very rich in all kinds of minerals, and its mining industry has of late years begun to advance with rapid strides and is full of promise.

NORWAY AND SWEDEN

NORWAY'S authentic history begins with A. D. 863–933, when Harold Harfager, or Fair-Haired, subdued the petty kings and united the tribes as a nation. Olaf I., who came to the throne in 995, destroyed the pagen temples, and laid the foundation of Trondhjem. In 1028 Canute the Great, of Denmark and England, drove Olaf out and became King. Then commenced a series of wars with Britain, followed by an invasion of Ireland. A warlike nation, they became noted for their prowess by water, and were a terror to the nations about them.

In 1262 the national prosperity of Norway began to decline after the defeat of Haco V. at the mouth of the Clyde, and his subsequent death in the Orkneys. Wars with Denmark exhausted the country's resources, national industries were checked, and the plague broke out in 1348 and ravaged the kingdom for more than two years, destroying two-thirds of the population. Centuries elapsed before this condition of decay was thrown off. The country not only lost its nationalty, but also its proper language, which finally became a corrupt mixture of those of its neighbors.

In 1380 the crown descended to the son of Olaf III., King of Denmark, and from that period down to 1814 these two countries were united. Margaret succeeded her son, Olaf III., reduced Sweden, and joined the three kingdoms under one monarch, under what is historically known as the "Union of Calmar." Gustavus Vasa severed this union with Sweden in 1523, and for two centuries Norway was scarcely more than a province of Denmark. About the beginning of the present century a better day dawned on Norway.

Union of the Two Countries.

After a series of dissensions and diplomatic complications, Russia, which had been engaged in warfare with Napoleon, indemnified Sweden for the loss of Finland—which on a former occasion Napoleon had signed away to Russia, without warrant—by the presentation of Norway, to which Sweden had no title. In 1814 the Danes acknowledged Norway as a dominion of Charles XIII. of Sweden, but a Danish prince, Christian, attempted to set up an independent sovereignity, but was compelled to abdicate, and on August 14th of the same year, Norway and Sweden were formally united, the ratification by the Storthing settling the matter on the 20th of October.

From this time the government became more and more liberal, titles of nobility were abolished, and the people styled citizens. In

1855 there was a good deal of anxiety felt over the encroachments of the Russian Government, and Norway, Sweden, England and France entered into an alliance in which "the two Scandinavian powers promised never to cede or sell territory to Russia, or to any other power, without the consent of England and France," and by this they received a guarantee of future territorial integrity under protection of the last named powers.

The modern history of Sweden follows somewhat in the pathway of its neighboring kingdom, Norway. After the establishment of the "Union of Calmar" (1397) by Margaret of Denmark, the three countries of Norway, Sweden and Denmark were kept together with great difficulty for 100 years. In 1520, Christian II. of Denmark became King, and so exasperated the people that they rose in revolt, with Gustavus Vasa at their head and their resistance to the government of the Danish King was so successful that, in 1523, Gustavus was made King of Sweden.

The country entered on an era of prosperity, and was governed in a manner more pleasing to the people, though the successors of Vasa attempted some radical changes which did not meet with general favor. The reigns of the sovereigns from 1600 were marked with almost constant warfare against adjoining kingdoms.

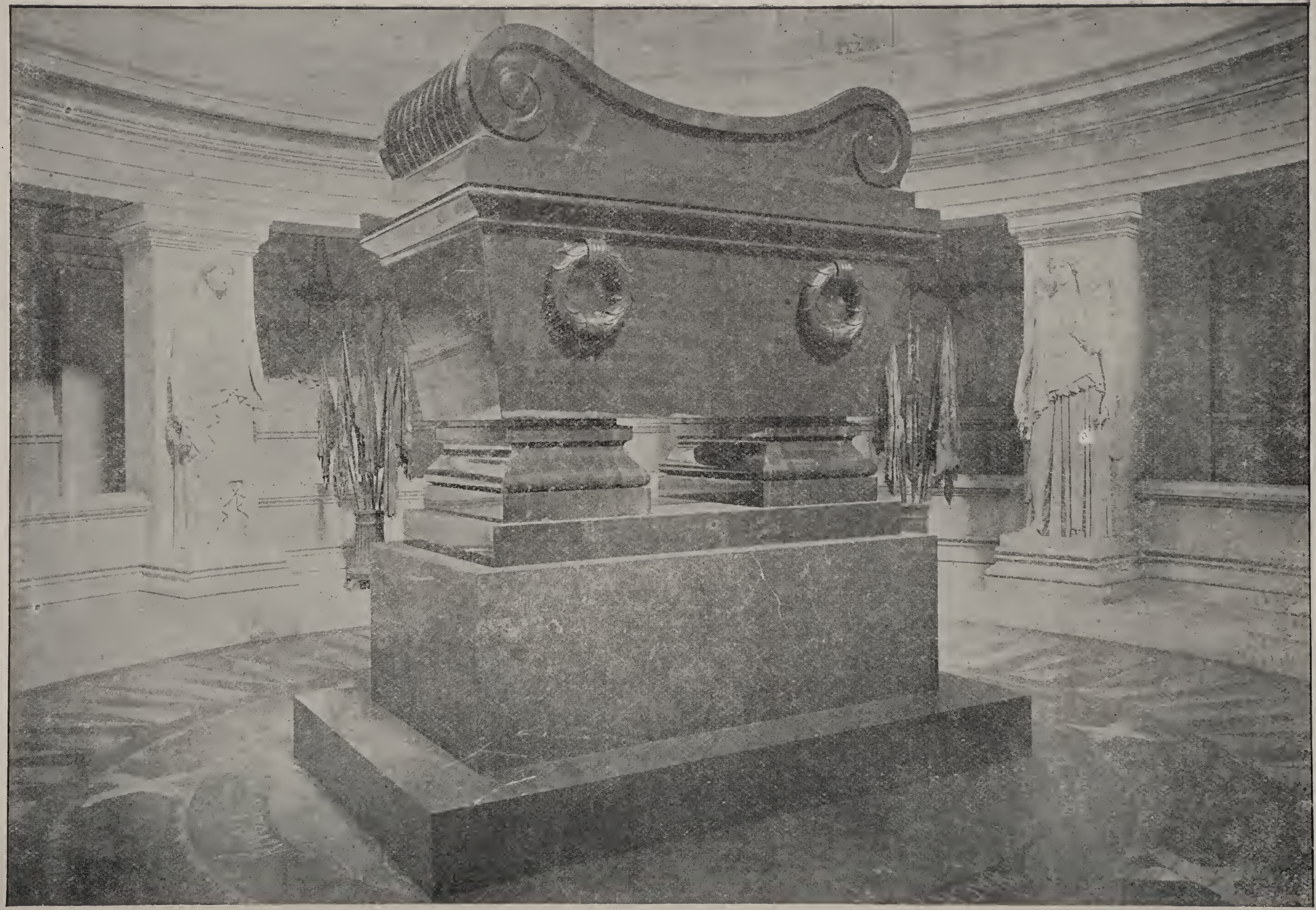
In 1741 Sweden was defeated in a war with Russia, and in 1743 East Finland was yielded to the conqueror. Following this, came a war with Prussia which was disastrous in the extreme. Again in 1787 Sweden was involved in a war with Russia and Denmark. In 1809 a new constitution was decreed. During the Crimean War neither Norway nor Sweden took any part therein. Of late years Sweden has prospered and made great improvement in manufactures, arts and sciences.

DENMARK

DENMARK has always exerted an influence in the affairs of Europe out of proportion to her size and military strength. Her authentic history dates from 1385, the year of the accession of Margaret, the "Semiramis of the North," and wearer of the triple Scandinavian crowns. After her glorious reign, Sweden, after a lengthened contest, succeeded in asserting her independence.

In 1658 Denmark was invaded and despoiled of some of her most important territories by the "Lion of the North," Gustavus Adolphus. In 1807 a British fleet under Lord Nelson bombarded Copenhagen and destroyed the Danish navy, and in 1815 Norway was transferred to Sweden, Denmark receiving in exchange the insignificant duchy of Lauenburg, with a money indemnity; a work of spoliation consummated in 1864-7 by the forcible acquisition of the Schleswig-Holstein duchies by Prussia, after a short but sanguinary struggle, in which the latter power, with the aid of Austria, overcame the brave Danes by sheer force of numbers.

In 1863 died Frederick VII., the last monarch of the House of Oldenburg, who was succeeded by the present King, Christian



TOMB OF NAPOLEON I., PARIS

IV., of Schleswig-Holstein-Sonderburg-Glücksburg.

The peaceful relations already existing between Denmark and England were confirmed by the marriage of Princess Alexandra of Denmark to the Prince of Wales, at Windsor, March 10, 1863.

When the war broke out between Austria and Prussia, in 1866, and resulted in the humiliation of Austria, the hope of Denmark that a part of her original territory, which, as already stated, had been acquired by Prussia, was frustrated. Notwithstanding her dismemberment, Denmark has prospered to an astonishing degree, and her material fortunes have been constantly in the ascendant. Her only trouble within the last decade has arisen from the dissensions in the two houses of Assembly and in the spread of dangerous communistic opinions.

The Government of Denmark is a constitutional monarchy, the King being assisted by a cabinet of seven ministers. Elementary education is widely diffused and attendance at school is compulsory for children between the ages of seven and fourteen years, poor parents paying only a nominal sum toward the government schools, of which there are about three thousand. The established religion is Lutheran, to which the King must belong, but complete toleration is enjoyed in every part of the kingdom. The present King of Greece is a prince of the royal house of Denmark.

HOLLAND—THE NETHERLANDS

BY the revolution of 1830, Holland, or the Netherlands, was separated from Belgium. The earliest accounts of the Netherlands are from the Romans, by whom all the southern and central part (called Belgia) was kept in subjection till the decline of their empire in the fifth century. It was formerly under the government of counts, but being incorporated with the extensive possessions of the Duke of Burgundy, the Netherlands passed to Maximilian of Austria, father of Charles V., who united the seventeen provinces into one state; but the bigotry of his son Philip II. produced the separation of the Dutch provinces, and great dissension and distress in the others.

They remained under the Spanish crown until the middle of the seventeenth century, when arduous exertions were made by Condé and Turenne to add them to the dominions of Louis XIV. The quadruple alliance, concluded at the Hague in 1668, however, put a stop to their progress, but the wars from 1672 to 1679, and 1680 to 1697, were prosecuted chiefly for the Netherlands. At length, in 1702, Louis obtained them, but the French being defeated by the Duke of Marlborough at the battle of Ramilies, in 1706, the southern provinces were brought under the power of the allies, and assigned to Austria at the peace of Utrecht.

A peace ensued, until the war of 1741 was transferred to the Netherlands, and the French under Marshal Saxe recovered them.

Bergen-op-Zoom was captured by the French in September, 1747, and Maestricht in the following year, when the successes of the British navy, and the persevering aspect of the coalition, led to the peace of Aix-la-Chapelle in 1748, and the southern Netherlands thus became restored to Austria. By the treachery of Austria in 1756 they were once more nearly ceded to France, but the scheme was not carried into effect.

In the campaign of 1792 Austria again lost the Netherlands, and though recovered in 1793, they again passed over to France in 1794. The hope of recovering them was the cause of the coalition of 1799 and 1805, both baffled in their object. The disasters of the French army in Russia in 1812, at length opened the long-wished-for prospect. In 1813 Germany occupied all the exertions of the allies, but in 1814 the Netherlands were detached by a consequence of the revolution by which the Bourbons were restored; and the British Cabinet accomplished the union of the seventeen provinces, and their erection into an independent state, under the Prince of Orange, in 1815. The Prince, therefore, assumed the title of King of the Netherlands and Grand Duke of Luxembourg.



VIEW OF DORT.

The bill for the emancipation of the slaves in the Dutch West Indian possessions, passed in 1862, decreed a compensation for each slave and came into force in 1863. The expenses of this emancipation came to $5,065,366, and the number of slaves set free was about 42,000, of whom 35,000 were in Dutch Guiana.

The present King having no living male issue, the succession to the crown was vested in the Princess of Orange, Wilhelmina, the only child of King William's second marriage, born in 1880. Of late years the great question of internal politics has been the new constitution, which was duly promulgated November 30, 1887. This act increased the electorate of Holland by no less than 200,000 voters. A revision of the school laws in a sectarian sense was carried early in December, 1889. Meanwhile, in 1888, the Queen, Emma of Waldeck, had been appointed regent in the event of the King's demise, and a council of guardians named to assist her in the education of Princess Wilhelmina.

Many industries are carried on, and the country has a large percentage of skilled artisans. Amsterdam has had the largest diamond-cutting trade in the world, ten thousand persons depending on that branch of industry, although in recent years it has been on the decline.

The Dutch were once called the "Carriers of Europe." While this designation does

not apply to them now, they still have a large mercantile marine. Minerals are scarce in the Netherlands, but valuable clay, for the manufacture of tiles, bricks and pottery is found everywhere in great abundance, and of late there has been somewhat of a revival of the Delft-ware, which was formerly so famous.

BELGIUM

IN the time of the Romans, Belgium was included in Gaul, and was known as *Gallia Belgica*. The people were mostly Celts, but while under the rule of the Franks, in the 5th and 6th centuries, by irruptions from the North the principal element of the population became German.

The country was afterwards divided into a number of independent duchies, counties and free cities, the principal of which was the County of Flanders. The male line of the Counts of Flanders became extinct in 1385, and their possessions passed into the hands of the Dukes of Burgundy, who soon after obtained the whole of the Netherlands.

By the marriage of Mary of Burgundy with Maximilian in 1477, the Netherlands came into possession of Austria. Maximilian was succeeded by his son Philip, who married Johanna, daughter of Ferdinand and Isabella of Spain, in 1496.

Holland, the northern portion of the Netherlands, established its independence, while the southern portion, Belgium, continued under the rule of Spain, Philip ceded Belgium to his daughter, Isabella, and her husband, the Archduke Albert, in 1598, under whom it formed a distinct and independent kingdom. Albert died in 1621 without issue, and the country again fell into the hands of Spain.

Between 1659 and 1697 Belgium lost considerable territory in the wars between Spain and France and Holland. By the treaty of Utrecht in 1713, Belgium was assigned to Austria. During the war of the Austrian succession almost the whole country fell into the hands of the French, but by the peace of Aix-la-Chapelle it was restored to Austria, 1748. In 1790 the provinces of Belgium revolted against Austrian rule, and formed themselves into an independent state under the name of United Belgium. They were, however, subdued by the Austrians in the end of the same year.

Austria's Power Overthrown.

In the war with revolutionary France the battle of Fleurus (1794) put an end to the Austrian rule in Belgium. In 1815 it was united with Holland under Prince William Frederick of Nassau. Belgium revolted in 1830, declared itself an independent state, and chose Leopold, Prince of Saxe-Coburg, as its king, in 1831. The five great powers afterward determined the limits of the territory, making Holland and Belgium separate kingdoms. Leopold died in 1865, and was succeeded by his son, Leopold II., the present monarch.

On the outbreak of the Franco-German war in 1870 the Belgians, fearing risks both from Prussia and from France, mobilized their army; but in a special treaty arranged by England, both belligerents recognized anew the neutrality of Belgium, guaranteed in 1831 and 1839. In 1885 the Congo Free State, under the presidency of Leopold II., was acknowledged by the powers.

Although the country has, on the whole, steadily grown in prosperity, and constitutional principles have been generally strengthened, yet 1886-87 witnessed industrial riots and Socialist disturbances of a serious aspect, attended at Liege, Mons. Charleroi and other places with great violence. The King, at the opening of the Chambers in November, promised that measures of reform should be introduced, and this had the effect of quelling the disturbances. In 1880 the jubilee of the state was celebrated with enthusaism.

King Leopold has distinguished himself by being the patron of Henry M. Stanley in his African explorations, having rendered material aid to the explorer.

The government is a constitutional hereditary monarchy, the members of the House of Representatives being elected by citizens who pay not less than twenty florins annually in direct taxes. The King can convoke, adjourn or dissolve the Senate and House of Representatives at pleasure. Under the mild and successful government of Leopold, the country has prospered, and the people seem attached to their King and constitution, and are peaceful and contented.

SWITZERLAND

SWITZERLAND, the ancient *Helvetia*, became, under the Roman empire, a semi-civilized country, and, after the fall of that power, passed in succession under Burgundian, Frankish and Germanic sway. In 1307 a movement of the three northern cantons of Schwyz, Uri and Unterwalden inaugurated the ultimate overthrow of Austrian rule in the result of the battle of Morgarten in 1315.

During the two following centuries the other cantons fell one by one into the arms of the Helvetic Confederation, which latter, however, did not obtain its solidarity as a European power until the peace of 1814.

In 1815 the perpetual neutrality of Switzerland and the inviolability of her territory were guaranteed by Austria, Great Britain, Portugal, Prussia and Russia, and the Federal Pact which had been drawn up at Zurich, and which included three new cantons, was accepted by the Congress of Vienna. The Pact remained in force till 1848, when a new constitution, prepared without foreign interference, was accepted by general consent. This, in turn, was, on May 29, 1874, superseded by the constitution which is now in force.

Following the new constitution of 1848 came the revolt of Neufchâtel against Prussia, to which country it had belonged, and its reception into the Swiss Confederacy

as a canton on an equal footing with the rest. During the Franco-German war of 1870–71 the landwehr were called out as a measure for the maintenance of Swiss neutrality.

The sublime scenery of the Alps draws tourists to Switzerland from all parts of the world and renders this remarkable country a constant and general object of interest.

ITALY

ITALY, since the downfall of Rome, has been divided into different states, and has lost that power which it formerly enjoyed. Its historical remains, its schools of art, its delicious climate, give it an undying interest. It has been called the garden of Europe; and the panegyric which Pliny bestows upon it does not seem in any degree exaggerated.

The ancient inhabitants called themselves Aborigines, offspring of the soil, and the country was soon after peopled by colonies from Greece. Italy has been the mother of arts as well as of arms, and the immortal monuments which remain of the eloquence and poetical genius of its inhabitants are universally known. The early part of the history of this country is, however, involved in the greatest obscurity. The first light thrown on this land of darkness was by the settlement of Greek colonies in the south, where, eventually, a large tract of country was called Magna Græcia. The annals of Rome are said to go back 750 years B. C.

Italy continued subject to one power for more than 800 years; until the fifth century, when the Goths crossed the barriers of the Alps. Toward the year 560 A. D. the Lombards entered the north of Italy, took Milan and Pavia, and founded a kingdom which continued during two centuries, until overthrown by Charlemagne.

Prolonged Military Struggles.

After his death Italy belonged to his successors on the imperial throne, but their tenure was precarious, the great barons laboring to assert their independence and the popes to extend their temporal dominions. The subsequent history is little more than a succession of military struggles, of little interest, until 960, when Otho I. repaired, in person, to the north of Italy, granted municipal rights to the cities, and improved the interior government in general.

The whole was united to the German Empire; but from this compact fresh feuds and commotions followed; the Italian nobility were jealous of their privileges; conspiracies were formed, detected and suppressed, and no constant allegiance was exhibited to the German Government or the magistracy put into authority by it.

A series of wars continued for several ages. In the fourteenth century Italy was divided into the kingdom of Naples, the estates of the Church, Tuscany, Parma and Lombardy, the Genoese and the Venetian territories and other petty states. For two centuries the Venetians and the Genoese

were the most considerable commercial people in Europe, and Venice, in particular, possessed large foreign colonies, and in 1194 took Constantinople and held in sovereignty portions of what now constitutes Turkey in Europe and Greece.

The foundation of the temporal power of the popes was laid about 1080, by Matilda, Countess of Tuscany, who bequeathed a large portion of her dominions to Pope Gregory VII. After that time the popes successively made great acquisitions of territory; but in 1798 Rome was taken by Berthier, and Bonaparte annexed the papal dominions to France. They were, however, restored in 1814.

In March, 1860, Savoy and Nice were ceded to France, to which they are still attached. Garibaldi and his volunteers conquered the Two Sicilies, Francis II. of Naples fled in terror, and the end of the great popular uprising was that in March, 1861, Victor Emmanual of Sardinia was proclaimed King of Italy. The Austrians held Venice until 1866, when Italy and Prussia united their forces against her. Rome remained in the hands of the French until the outbreak of the Franco-German war, in spite of the abortive revolutions instigated by Mazzini and Garibaldi.



NAPLES, SHOWING MOUNT VESUVIUS IN THE DISTANCE.

Finally, on September 20, 1870, the national forces entered Rome, which became at

last the capital of United Italy. Victor Emmanuel was succeeded in 1877 by his son Humbert. The Pope still resides in Rome, but has no jurisdiction except within what is known to Italy as the "Leonine City." Parliamentary government has been accorded in the fullest degree.

The defeat of the Italian army in Abyssinia, March 2, 1896, caused great excitement at Rome and elsewhere throughout the country; and troops were called out to suppress demonstrations against the government; Crispi's ministry immediately resigned and another cabinet was formed.

SPAIN

SPAIN, after being partially colonized by the Phœnicians and Carthaginians, became a Roman province under Augustus, and some 400 years afterward was successively overrun by the Vandals, Goths and other northern races. In the eighth century the Moors successfully invaded the country, and remained virtual masters of the entire Spanish portion of it till the reign of Ferdinand and Isabella, when, in 1492, they were finally driven back into Africa.

Under Charles V., and his son Philip II., Spain became the greatest power in the then world. But with the latter prince began that decay which speedily reduced it to a mere shadow of its past glory and importance. After the death of Charles II., in 1700, began the so-called *War of the Spanish Succession*, in which the rival claims of France and Austria to the throne terminated in favor of Philip V., grandson of the French King Louis XIV.

Between 1759 and 1763 an unsuccessful war was waged against England, and in 1778 Spain again took up arms against that country, and at the peace of 1783 received the island of Minorca and the American Floridas.

The later chief events in Spanish historical annals have been: The struggle against Napoleon during the so-called *Peninsular War;* the restoration by French arms, in 1823, of the Bourbon dynasty in the person of Ferdinand VII., whose tyranny had led to a revolution in 1820; the *Carlist War*, 1833-40, ending in the triumph of the Christinos; the exile of Queen Christina in 1854; a war with Morocco in 1858-9; the annexation of St. Domingo in 1861; a war with Peru and Chili in 1864-5; the downfall of the Bourbon monarchy in 1868; the insurrection in Cuba in 1868-75; the election of Amadeus of Savoy as King of Spain in 1870; his abdication in 1873; the adoption of a republican form of government under Castelar and Serrano, 1873-4; and the restoration of the monarchy in the person of Alfonso XII., son of Isabella, January, 1875. Spain, from 1873 to 1875, was the theatre of a civil war waged against the government by the adherents of Don Carlos, who held nearly all the northeast of the country.

On March 1, 1896, a mob in Barcelona attacked the American Legation, tearing down the Stars and Stripes and trampling them under foot. The town authorities attempted to disperse the mob and used their efforts to protect the Legation. On the day following, the Spanish authorities called at the Legation, expressed regret for the unfortunate occurrence and promised full reparation. The immediate cause of the outbreak was the proposed resolutions, by the United States Senate, expressing sympathy with the attempt in Cuba to gain independence. For several days the demonstrations against the American flag continued and troops were required to disperse the mobs.

PORTUGAL

UNDER its ancient name of Lusitania, Portugal was constituted a Roman province under Augustus, and so remained till the fifth century, when it became subject to the Visigoths. In the eighth the Moors took possession of the country and held it for four centuries, at the end of which period they were driven out by Prince Alonzo Enrique, of Castile, who thereupon was elected King. Under the dynasty he founded Portugal made rapid progress, and under John I., and in the reigns of John II. and Emanuel, 1481–1521, became eminent as a maritime and colonizing power, establishing settlements in the East and adding Brazil to her dominions.

Under Sebastian III. began that fruitless crusade against the Moors which cost that monarch both his life and crown. Later, Portugal became a dependency of Spain, but in 1640 she threw off the yoke and placed the Braganza dynasty on the vacant throne. In 1807, after the deposition of the royal family by decree of Napoleon, Dom Pedro, the King, withdrew to Brazil, of which country he became first Emperor.

The Government is a limited monarchy, and the Legislature, known as the *Cortes*, consists of two houses—one of Peers, the other of Deputies. The Roman Catholic is the state religion, but entire toleration with respect to others prevails.

A Steady Decline.

For many years the financial condition of Portugal has gone steadily from bad to worse. The rush of the European powers to appropriate African soil awakened, for a time, her old spirit and ambition, but the awakening came too late. The march of events and the energy of her rivals have wrested from her many square miles that she claimed as her own, but had done next to nothing to colonize and develop. England in the end of 1889 compelled Portugal to abandon her claims to Nyassaland, and two years later a treaty was signed defining the

respective spheres of influence of the two countries in East and West Africa, especially in the basin of the Zambesi. Further delimitations were agreed upon in 1891.

In the meantime Charles I. had succeeded his father, October, 1889. The action of Britain occasioned an outburst of strong popular feeling in Portugal, which the republicans turned to their own advantage, and they were greatly helped by the successful revolutions of the republicans in Brazil and the expulsion of the Emperor, November, 1889. But in the home country their advantage proved to be only temporary.

GREECE

GREECE shares with Rome the absorbing interest of ancient classic story. Glorious in arts and arms, renowned for her temples and mythology, her warriors, poets and statesmen, her controlling influence at one time in the affairs which make up the annals of ancient nations, she is at once the admiration of the scholar, the artist and the historian. Her classics have come down to us with all the charm of learning and romance and have long been the study of the most cultured classes of modern times.

The earliest settlers in ancient Greece were the Pelasgi, who were in course of time replaced by the Hellenes, a people which consisted of four tribes, namely, the Æolians, Dorians, Ionians and Achaians. Colonists from Phœnicia and Egypt followed the Hellenes, and joined with them in extending their united sway over the country. About 2000 B. C. the great cities of Athens, Sparta, Thebes, Argos and Corinth sprung into existence, and became in course of time the centres of political governments of a democratic form, and of a progressive advancement in civilization, education and artistic refinement. Their commerce embraced within its scope the ports of Gaul and the Mediterranean, at the same time that their naval and military power became extended in a corresponding ratio.

Philip of Macedon.

Civil discords, however, originated the Peloponnesian War, B. C. 434–404, by which their union of interests became broken up, and rendered Greece a prey to foreign invasion under Philip of Macedon, who, after the battle of Cheronæa, B. C. 338, became master of the country. Afterward, by the disruption of the Achaian League, Greece became a Roman province, 146 B. C. Then followed the decline and ultimate extinction of the glories of Greek art and civilization.

Invasions by the Goths, Vandals and Normans succeeded one another in turn till 1261, when the whole country—except Athens and Nauplia—became merged in the Greek Empire of Michael Palæologus. The Turks took possession in 1481, but their tenure of the country was contested for a period of two centuries by the Venetians,

until finally it was definitely secured to them by the treaty of Passarovitz.

In 1821 a revolution broke out against the Ottoman yoke, and the independence of Greece was secured by the interference of foreign powers, after the defeat of the Turks at Navarino, 1827. After a brief provisional government under Count Capo d'Istria, Greece was made into a monarchy by the protecting powers, and Otho, of Bavaria, placed on the throne in 1832. He reigned till 1863, when he was dethroned and the crown conferred upon George I., a prince of the reigning house of Denmark.

TURKEY

NO reputation less enviable belongs to any nation of the globe than that of Turkey. "The Unspeakable Turk" has long been an object of suspicion and hatred by reason of political intrigues, violation of sacred oaths, the rapacity that characterizes the savage, and the universal sentiment, amounting to a tyrannical law, which subjects everything to the reign of the Mohammedan religion. The most recent history of Asia is dark with the crimes and massacres that have made Armenia the theatre of wholesale slaughter, such as perhaps is unparalleled in all the annals of time.

The Ottoman Empire, properly speaking, comprehends all the countries in which Turkish supremacy is directly or indirectly recognized, and it includes some of the most beautiful as well as most ancient sections of the globe, in point of civilization. As a whole, the empire is an aggregation of governments, often widely separated, and only united by having been the subjects of a common conquest.

The Turks are first noticed in history about the year A. D. 800. They came originally from Asia and are of Tartar origin. They captured a portion of Armenia, which they called Turcomania, and in a short time pushed their dominion to the Hellespont, and finally obtained a foothold in Europe. The petty states into which their dominions were at first divided were united under Othman, one of their chiefs, in 1289. After him came his son, and then his grandson, Amurath, who established the Janizaries in 1362, a powerful and well-disciplined army, composed of youths selected from his Christian captives. He conquered the greater part of Thrace, and made Adrianople his capital.

His successor, Bajazet I., conquered the greater part of the Eastern or Greek Empire and besieged Constantinople; but being summoned to Asia to stop the encroachments of Tamerlane, he had to abandon the siege. Bajazet assumed the title of Sultan,

his predecessors being known by that of Emir. In 1453, Mahomet II. took Constantinople and made it the capital of the Turkish or Ottoman Empire. His grandson, Selim I., conquered Syria and Egypt, and Solyman the Magnificent, annexed the greater part of Hungary and extended the Turkish dominions in the East.

The Turks Defeated.

From the reign of Solyman the power of the Ottomans continued unabated till 1683, when John Sobieski, King of Poland, defeated the Turks and drove them out of Austria and Hungary. Thenceforward the power of Turkey continued steadily to decline. By the peace of Carlowitz, in 1699, Austria, Venice and Poland received back the territory previously wrested from them by Turkey.

During the eighteenth century Turkey was engaged in an almost uninterrupted series of wars with Russia, the result of which was seriously detrimental to the Turkish interests. Russia secured the Crimea and Azov, and the River Dniester was made the boundary between the two empires.

The Greeks rose in rebellion in 1821, and adopted an independent provisional constitution in 1822. The manly efforts made by the Greeks in face of overwhelming odds induced liberty-loving people in many European countries to furnish the patriots with men and money. Prominent among those who figured in the struggle for Grecian freedom was Lord Byron, who died at Missolonghi in 1824. Russia, France and England finally interfered in behalf of the Greeks, destroyed the Mohammedan fleet at Navarino, and compelled Turkey to acknowledge the independence of Greece, 1829.

In 1853 the Emperor Nicholas of Russia demanded that a Russian protectorate be established over the Greek Christians in the Turkish Empire—a demand that was resisted by the Sultan. Nicholas thereupon declared war and invaded the Danubian Principalities. England and France joined Turkey as allies in 1854, and in 1855 Sardinia also embraced the cause of the Sultan.

The Russians were defeated and had to evacuate the Danubian Principalities. The seat of war was then transferred to the Crimea, a peninsula in the south of Russia, on the Black Sea. Here the Russians were defeated by the allies at the battles of Alma, Inkerman and Balaklava. Sebastopol, the greatest Russian stronghold on the Black Sea, was besieged, and after a protracted resistance capitulated. Peace was finally concluded at Paris in 1856.

War with Russia.

The European powers having been unable to satisfactorily settle the differences between Turkey and her other rebellious provinces, Russia interfered in behalf of the latter, and declared war against Turkey in 1877. A desperate struggle ensued, the most celebrated battle fought being that of Plevna, in which the Turks suffered a severe defeat. The result of the war was that the Danubian Principalities secured their independence, and Russia received Bessarabia, Batoum, Kars and Ardahan in Asia.

Turkey in Europe at present covers about 62,028 square miles, and has a population of 4,786,545. Turkey in Asia occupies 710,320 square miles, and has a population of over 21,608,000.

In Egypt (the principal Turkish possession in Africa) the hold of the Sultan appears to be very weak. The present condition of Turkey seems to warrant the title, "the sick man of Europe," for some time applied to it.

Turkey has always been true to herself.

The history of the Mohammedan power is one of rapine, outrage and murder, and the massacres in Armenia were only what might have been expected. None the less they were enough to awaken the horror and indignation of all civilized peoples.

EGYPT

THE epoch of Menes is the first chronicle in the history of ancient Egypt, and has been placed at 5004 B. C. This fact points to a very ancient origin. Allusions are made to Egypt in the Book of Genesis and many other parts of the Bible. The history of the country is largely written upon tablets of stone, which in recent times have been deciphered, thus rendering Egypt a country of peculiar interest.

Unfortunately the decline which has affected all the old nations of the East has cast down the ancient glory and left everywhere the footprints of death. Still, in her ruins Egypt is a country of marvelous interest. Long subject to outside powers, she still maintains her traditional character and customs.

A royal dynasty ruled for some centuries before Cambyses, 524 B. C., and by that line of monarchs were constructed those grand pyramids, temples and obelisks, whose remains make of Egypt the oldest of classic lands. Cambyses brought Egypt under Persian sway till the time of the invasion of Alexander the Great, who built Alexandria.

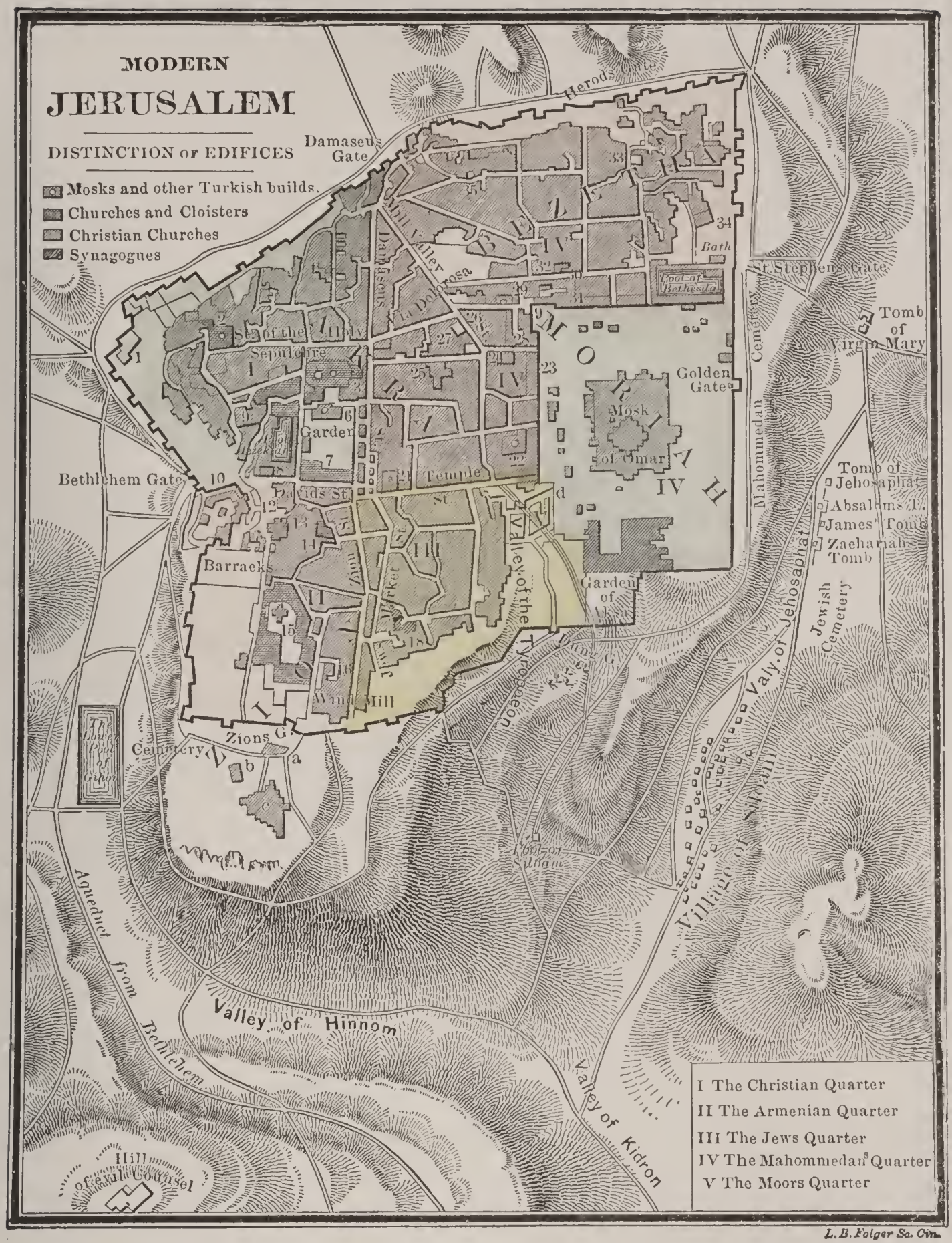
After him came the line of Ptolemies, ending in the person of Cleopatra, under whom it became a Roman province. After a possession of 760 years the Romans gave place to the Saracens, who ruled Egypt till 1250, when the Mameluke dynasty was established.

At the beginning of the sixteenth century it fell into the hands of the Turks, under whom it became a satrapy, and the object of incessant contention among the Mameluke Beys. The French under Napoleon occupied the country, 1798-1802. In 1811, Mehemet Ali, after a massacre of the Mamelukes, made himself master of Egypt, and the succession was confirmed to him and his descendants by the treaty of London, 1841.

The Title of "King."

In 1866 enlarged powers were granted the Egyptian rulers by conferring on them the title of Khedive (king). The former Khedive, Ismail Pasha, was deposed by the Sultan, June, 1879, and was succeeded by his son, Mohammed Tewfik.

The reigning Khedive is Abbas, born July 14, 1874, son of Mohammed Tewfik, who succeeded to the throne on the death of his father, January 7, 1892. In the summer of 1882, in consequence of a military rebellion, England intervened, subdued the uprising, and restored the authority of the Khedive. Egypt embraces 10,698 square miles and has a population of 6,817,265. The prevailing



19 Synagogue of the Portuguese Jews.
20 Mosque.

IV.—THE MOHAMMEDAN QUARTER.

21 Khan and Bazaar.
22 Mineral Bath.
23 Convent and Schools.
24 Institute for Blind Dervishes.
25 Hospital of St. Helena.
26 Reputed site of the House of the Rich Man.
27 Repnted site of the House of St. Varonica.
28 Residence of the Turkish Pasha.
29 Arch of the "Ecce Homo."
30 Place of the "Scala Sancta," the Holy Staircase.
31 Pilate's House.
32 Place of Flagellation.
33 Ruins of a Church. House of Simon the Pharisee.
34 Church of St. Anna.
35 House of Herod. Dervish's Mosque.

V.—THE MOORS' QUARTER.

a Armenian Convent. House of Caiaphas.
b American Burial Ground.
c David's Tomb.
d Place of Wailing of the Jews.
Just within Zion's Gate are wretched abodes of lepers.

Longitude East from Greenwich

30′ 35° 30′ 36° 30′

30′ 33° 30′ 32° 30′

Shehim
Ras Rumeileh
Saida (Sidon)
el Mamariyeh
Sarepta (ruins)
Seiriyeh
Tyre or Sur (Tyrus)
Ras el Abyad (C. Blanco)
Ras el Musheirifeh (en Nakura)
ez Zib (Eodippa Achzib)
Acco Acre
Acco Ptolemais
Bay of Acre
C. Carmel
Haifa
Athlit (Castel Peregrin)
Surafend
Tantura (Dora)
Kaisariyah (Caesarea Palestinæ)
Nih
Birr
Jebaa
Lusah
Kokeba
Deir es Zafarani
Serafend
Hasbeya
Nahr Litany
Iruna
Kefr Shubeh
Beit Jenn
Eirun
Meraken
Abil
Hunin
Asiyeh
Kana
Tibnin
Menarah
Shihariyeh
Yatir
Buleida
Jebein
Nakura
Ikrit
Ainatha
Kedes (Kedesh)
Maron
Almaniyeh
Kabery
Suhmata
Delata
Ramel (Ramah)
Meiran
Safed
el Mezraa
Amkah
Yanuk
Mejdel Karam
Ferady
Kabara
Khan Minyeh (Capernaum)
Kabul (Casul)
Jefat (Jotopata)
Tireh
Kefr Kenna (Cana)
Mejdel
Sefurieh
Turan (Sepphoris)
Kulmon
El Tireh
Bet Lahm (Bethlehem)
en Nasireh (Nazareth)
Sheikh Abrit
Jebatha
Muhraka
Endor
Nein (Nain)
Little Hermon
Solem (Shunem)
Kaukab el Hawa
Jelbon (Gilboa)
Kefr Kud
Umm el Fahm
Subbarin
Mukeibileh
Jenin (Ginæa)
Akhdar (Kana)
Tubas
Shuweikeh
Tell Dothan
Jezreel
Zer'in
Shunem
Nain
Tell el Mutesellim (Megiddo)
Taanach
Ajjul
Jaba
Jenin
Tell el Farah
Tell el Farus
Wady Allan
Golan?
el Jabie
Bahr Tubariyeh (Sea of Tiberias) (Sea of Galilee) (Lake of Gennesareth)
Khan
Dukah
Bethsaida Julias
el Tell
Khan Minyeh
Fik Apheca
Jibin
Kefr Harab
Kees Sumrah (Hippos)
Mukutta
Aebdin
Abil (Abila)
Hebras
Um Keis (Gadara)
Amatar
Seifin
el Heraimy
Beit er Ras
Eauara
el Arbaia
Kefr Rakta
Bethshean (Scythopolis)
Mughar
Kuneitirah
Alleikah
L. Huleh (Waters of Merom)
Kereimbeh
Wady el Harram
Shukhah
Deir el Adas
Kefr Shems
Sunameih (Acre)
Judeideh
Semleino
Jasem
Obteia
Nawa (Neve)
Shukrak
Edhra (Zora)
Ehmiskin
Tsil
Mezarib
Rukhm
Arar
Dera
Gharz
Remtyeh
Irbid (Arbela)
Semme
Jemal es Sajire
Kureh
Bsre
Kirtat
Dalal
Thaly
Welgha
Deir et Tureifeh
Umm Wulad
Sahwet el Kamh
Afineh
Kureiyeh
Bazrah (Bozrah)
Ghusam
Wady Zedi
Wady Sitar
Umm el Mejadin
Keoweh
Wady Awaj
(Pharpar)
Bahret el Ilyaneh
Deir Aly
Sasa
Taibeh
Danun
Merjaneh
Malch Buras
Bahret Bala
Bahret Esk Shirkiyeh
Rihan
Saljiyeh
Barada (Abana)
Bessima
Menin
Suk
Noleh
Sabineh
Ghuzlaniyeh
Kaukab
Bahret el Kibliyeh
Hijaneh
Suwaret el Kehireh
Hemman
Dhekir
Wady Luza
Rudheimeh
Hadar
Unrak
Shaarah
Musmieh
Jebab
Kureim
Khubab
Tibny
Kustul
Zebireh
Jedal
Damet el Alyah
Suweidirah
Umm ez Zeitun
Kiratal
Hurran
Dama
Nejran
Busr el Hariri
el Dur
Doroa
Deir el Khunawa
Sijn
Kunawat (Kenath)
Mezaah
Hurak
Wel Ghar
Rukhm
Dalal
Kerak
Thaly
Deir et Tureifeh
Umm Wulad
Sahwet el Kamh
Afineh
Kureiyeh
Bazrah (Bozrah)
Ghusam
Wady Sitar
Semme
Jemal es Sajire
Kureh
Bsre
Irbid (Arbela)
Remtyeh
Ghazz
Dera
Arar
Kirtat
Mezarib
Ehmiskin
Tsil
Edhra (Zora)
Shukrak
Nawa (Neve)
Judeideh
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Beit er Ras
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Akhdar (Kana)
Tubas
Shuweikeh
Tell Dothan
Jezreel
Zer'in
Shunem
Nain
Tell el Mutesellim (Megiddo)
Taanach
Ajjul
Jaba
Jenin
Tell el Farah

A NEW MAP OF PALESTINE OR THE HOLY LAND

Statute Miles 5 10 15 20 25

EXPLANATION

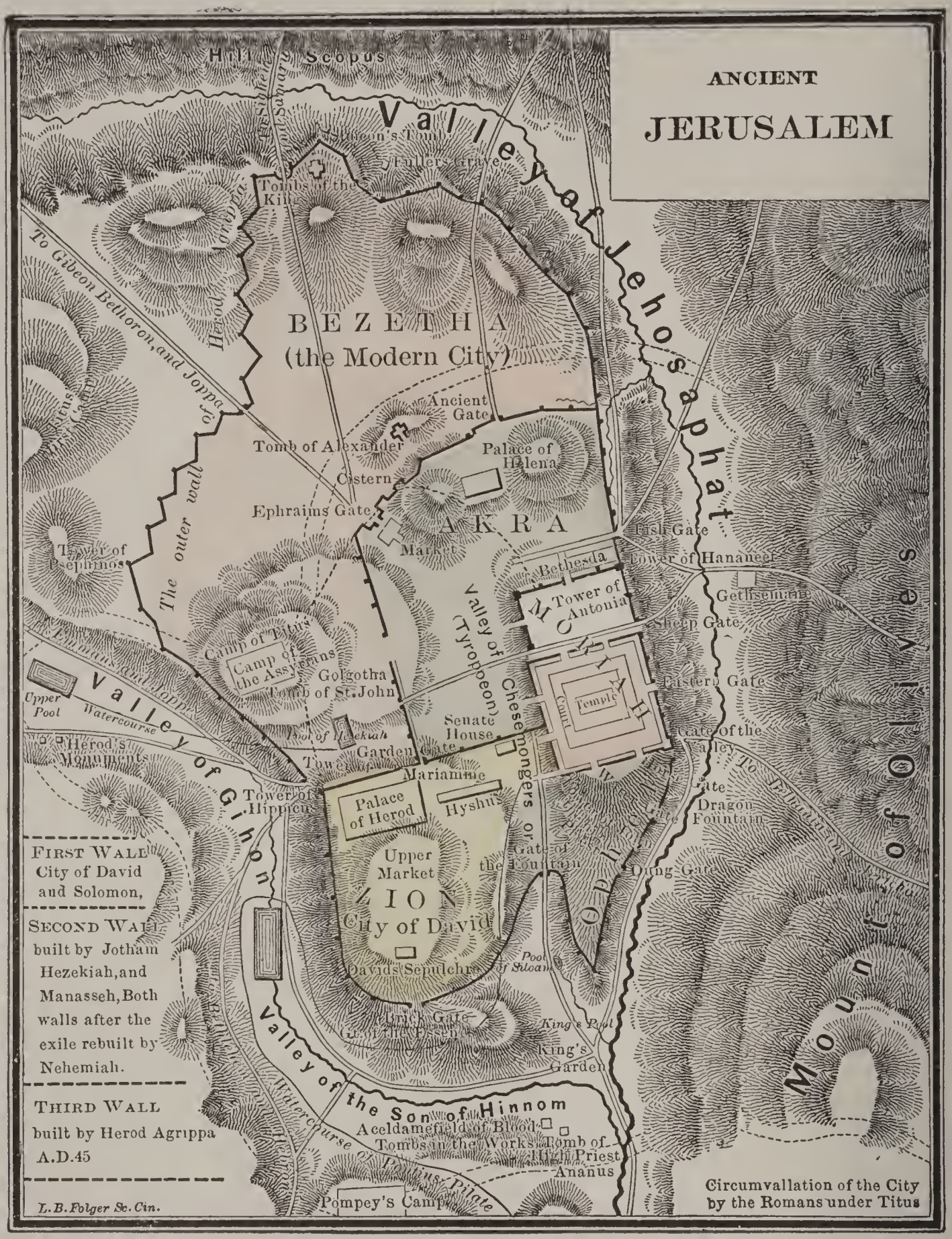
Ard — Plain	Jebel — Mountain	Kulah — Castle
Ain — Fountain	Jisr — Bridge	Mar — Saint
Beit — House	Khan — Inn	Nahr — River
Bir — Well	Kefr — Village	Ras — Cape
Deir — Convent	Kuryeh — Town	Tell — Hill

Wady — Valley or Watercoure mostly dry in Summer

Under Turkish rule, Palestine is comprised in the Two great Governments of Damascus, East of the Jordon and Lebanon, and Beirut or Sidon on the West; which are again divided into Pashalics.

Scriptural & Classical names where the modern name is given, inclosed in parentheses Seilun (Shiloh)

MEDITERRANEAN SEA
PHILISTIA
Plain of Philistia
Nahr Abu Zabura
Nahr el Falaik
Nahr el Aujeh
Shekh Musa
Mukhalid
Ellar
Jerba
Silet ed Dahr
Kefr el Debado
Sebaste (Samaria)
Arsuf (Apollonia)
el Haram
Ejlil
Kefr Saba
Kirkilia
Kefr Kaddin
Jiljulia (Gilgal)
Hawara
Zawiyeh
Beit Lid
el Fejjeh
Jaffa or Yafa (Japho or Joppe)
Salamch
Lubban
Arimathea
Gil
Tibnah (Timnath)
Muzeirah
Ludd (Lydda Diospolis)
Jesumala
Suffa
Ramleh
Yebna (Jabneh Jamnia)
Akir (Akron)
Amwas (Nicopolis)
Yalu (Ajalon)
Yazur (Hazor)
Surah (Zorah)
Esdud (Ashdod)
Tibneh (Timnath)
es Sawafir (Saphir)
Hamameh
Askulan (Ascalon)
Tell es Saffiyeh (Gath)
Beit Jibrin (Eleutheropolis)
Burbarah
Um Lakhis (Lachish)
en Nesleh (Majuma)
Dimreh
Azza or Ghuzzeh (Gaza)
Samson's Mound
Huj
Khan Yumas
Um el Jerar (Gerar)
Tell Sheriah
Tell Lakiyel
Bir es Seba (Beersheba)
Desert of Beersheba
Sbeta
Ararah (Aroer)
SAMARIA
Mt. Ebal
Shechem
Jacob's Well
Salim (Shalim)
Akraheh (Acrabi)
Mt. Gerizim
PHARAIM
Beit Esteh
Seifun (Shiloh)
ed Daumeh (Baumia)
Fusail
Kefr Istuna
Tell Azur (Hazor)
Beitin (Bethel)
Tell er Hajar (Ai)
er Ram (Ramah)
Brook Cherith
Jericho
Khirbet es Sumrah
BENJAMIN
Mt. of Olives
Moharfer (Gilgal)
Beth Hogla (Bethabara)
N. Sammil (Mizpah)
JERUSALEM
Bethany
Silwan (Siloam)
Ain Feskhah
Beit Lahm (Bethlehem)
Mar Saba
Jebah (Gibeah)
Jedur (Gedor)
Tekua (Tekoa)
Beit Nusib (Nezib)
JUDAH
Tell Zif (Ziph)
Erfaiyeh
Ra. Mersed
el Khulil (Hebron)
Ain Jidi (Engedi)
Kurmul (Carmel)
Dhoheriyeh
Attir (Adar)
Tell Arad (Arad)
Tell Milh (Malatha)
Sebbeh (Masada)
Pt. Costigan
Pt. Molyneux
Shallow B. formerly Valley of Siddim
BAHR LOOT (Lots Sea)
(Salt Sea)
DEAD SEA (Lacus Asphaltites)
(Sea of the Plain)
Mountains of Edom
Wady el Jeib
Wady el Ghar
Wady el Khureitun
Wady el Jaamrah
Wady el Hasy
Wady Sheriah
Wady el Adaa
Wady Simaim
Wady el Kais
Wady el Seyal
Wady Surar
Wady Ghuzzeh
Wady el Abiad
Wady Rubin
Wady Surar
Wady Deburah
Wady en Nar
Wady el Ahsy
Wady el Arnon
Wady el Mojib
Wady el Kerak
Wady el Ahsa
Wady el Fenan
Wady el Birm
Wady el Kureim
Sakut (Succoth)
Tell Ajjata (Amathus)
Tell Hamma
Shuneh
Yosela
Um Tail
Batneh
Näby Shaib
Tell Nimrim (Beth Nimrah)
Tell Keferein (Abel Shittim)
Tell er Rama (Beth Ramah)
Suweimah (Beth Jesimoth)
Jalesh
Tell Jenneh
Tibbin
Abu Obeideh
Hemta
el Herath
Jebel Jelad
Mts. of Gilead
es Salt (Ramoth Gilead)
Kuldeh
Sem
Jaezer
el Marussus
Hesban (Hesbon)
Madeba (Medaba)
Mt. Nebo
Mt. Pisgah
REUBEN
Burazan
Urnieheh
Um er Rusas
Lejum
Dhiban (Dibon)
Aroer (Aroer)
Jebel Shehan (Shihon)
Khirbet Sarifeh
Rabba (Rabbath Moab) (Areopolis)
Kureithela
Zoar
Kerak (Kir Moab)
Mts. of Moab
Kurraneh
Ammon
Jebel Ammon
Ummon
Ummon
Umm



MODERN JERUSALEM.

I.—THE CHRISTIAN QUARTER.

1 Goliath's Castle.
2 Latin Convent.
3 Church of Holy Sepulchre.
4 Greek Convent.
5 Coptic Convent.
6 Ruins of St. John's Hospital.
7 Greek Church. St. John's.
8 Residence of the Christian Bishop.
9 Church of the Greek Schismatics.
10 Tower of Hippicus. David's Tower.
11 Supposed Site of the Tower of Phasaelus.
12 The Prussian Consulate.
13 Modern Evangelical Church.
14 Hospital and Syrian Convent.

II.—THE ARMENIAN QUARTER.

15 Armenian Convent, with the Church of St. James.

The only building in Jerusalem which presents any appearance of comfort.

16 Nunnery of St. George.
17 Barracks.

III.—THE JEWS' QUARTER.

The most wretched in the city.

18 Synagogue of the Shepardim.

religion is Mohammedan, exclusive of 600,000 Copts, who have the honor of being Christian descendants of the ancient Egyptians.

The country changes but slowly, is fixed aud stereotyped, like all others of the Orient, and gives little sign of progress.

PALESTINE

PALESTINE derives its name from the Hebrew *Peleścheth* ("Land of the Philistines"), and in remote times was known as Canaan. Under the reigns of David and his son Solomon, it constituted a flourishing kingdom. The subsequent history of Palestine is identical with that of Judea and of the Jewish people, until its subjection by Rome.

The country remained in the power of the Romans till the conversion of the empire to Christianity, when it became an object of religious veneration. In the sixth century it fell under the sway of the Mohammedans, which gave occasion to the Crusades. Jerusalem was taken by the European forces, and was under Godfrey of Bouillon erected into a Latin kingdom, which endured for above eighty years, during which the Holy Land streamed with Christian and Saracen blood. In 1187 Judea was conquered by Saladin, on the decline of whose kingdom it passed through various hands, till, in 1517, it was finally added to the Turkish Empire.

To all Christians throughout the world Palestine is a Holy Land. It is associated with the lives of patriarchs, prophets and apostles, and also with that of Jesus of Nazareth. Early in the Christian era Jerusalem received the blow that shattered its sacred temple, and began the downfall of the most remarkable nation of the ancient world. The old landmarks are obliterated, the country has been desolated, no bright future seems to be before it, yet of all lands on the face of the earth it is the one whose soil is trod with reverent feet, and whose localities have an absorbing interest to the visitor.

Modern Changes.

As regards Jerusalem, a new town has sprung up outside the walls, and there are about 50,000 Jews in and about the holy city. Yet the character of the ancient nation has been changed and Palestine as it once was does not exist.

The present condition of the country shows the beginning of rapid changes in every direction. The thousands of visitors who every year pour into the country contribute in no small degree to alter the character, the habits and the ideas of the people. Roads are being everywhere constructed in a country where, but a few years ago, there were no roads. The traveler can now drive from Jaffa to Jerusalem, from Jerusalem to Jericho, and also from Jerusalem to Hebron. Societies formed for ex-

ploration have done much toward preserving the history of the country as revealed in its present ruins. Those who wish to see Palestine as it has been for a thousand years and more, must go at once or they will never have the opportunity.

ARABIA

ARABIA consists of a peninsula, with a length of about 1500 miles, a breadth of 900 miles (Suez to Bassorah), and an area of more than 1,000,000 square miles. It sea-coast is over 1200 miles long, and a large proportion of the country is an arid, sandy desert. On the shores of the Red Sea and Persian Gulf there is, however, considerable good and fertile land.

The Arabs claim descent from Ishmael, and have always been a wild and independent people of nomadic instincts. Their history proper begins with the advent of the prophet Mohammed and the foundation of the Caliphate. There are properly from 12,000,000 to 15,000,000 inhabitants of the Peninsula, of whom all but a few Guebres (fire worshippers), some negroes and a few Jews, are Mohammedans.

Coffee, believed to be indigenous, is one of the chief articles of export, and balm, frankincense, gum arabic, cassia and other drugs and spices grow freely. Wheat, barley, beans, millet and lentils form the food of the natives, and almonds, dates, and tamarinds are largely exported. The rivers of Arabia are few and unimportant; the heat is intense, and little rain falls at any season.

CHINA

THE early history of China is lost in antiquity. In the 11th century the country was subjugated by Jenghis Khan, whose descendants were afterward supplanted by the *Ming* dynasty of native princes. In 1294 the first Christian missionaries reached Pekin. In the early part of the 17th century, the Ming dynasty was subverted by the Mantchoo Tartars, who substituted an emperor of their own race.

The first foreign powers to establish relations with China was Great Britain in the 17th century. In 1839, seizure by the government of opium belonging to British mer-

chants was the cause of hostilities, known as the "Opium War," 1840, and which was put a stop to by treaty in 1842, by which the Island of Hong-Kong was ceded to England, five ports opened free to foreign commerce, and a heavy indemnity paid the English merchants. This treaty was followed by one with the United States in 1844, and with France in 1845. In 1851, a rebellion on a large scale broke out, known as the Tae-ping Civil War, which, after many successes on the part of the rebels, was temporarily suppressed in 1853. Another war with England, in conjunction with France, occurred in 1856, in which Canton was bombarded, and Pekin menaced by the Europeans. Another treaty, June 26, 1858, terminated hostilities, and gave new and important advantages to foreigners, among which were the toleration of Christianity, the opening of new ports to commerce, and the reception at Pekin of foreign envoys.

In 1859, an attempt to ignore this treaty led to the occupation of Pekin by English and French troops; after which the treaty was ratified. From 1861 to 1868, the Tae-ping rebellion broke out anew, with slight intermissions. In 1867, Mr. Burlingame was appointed envoy-extraordinary from the United States to Pekin, and in 1868 effected a treaty with China, which conferred on Americans in China the same rights and privileges possessed by Chinese in the United States. In 1871, to avenge outrages by the Coreans upon American shipwrecked mariners, a United States force visited their peninsula. Recent years have seen the termination of the rebellion in Sungaria, and better relations between China and Russia, arising over the Kashga rebellion, which was put down in 1879.

The war between China and Japan in 1894 resulted disastrously to the former, the superiority of the Japanese arms being evident at every point of the contest. China sought by diplomacy to avert further catastrophe, and the strong hand of Russia was soon seen in the terms of peace.

JAPAN

THE empire is politically subdivided into provinces, departments and districts, formerly governed by upwards of 200 princes called *Daimios*, each of whom held absolute power over his own jurisdiction; in 1870–1, these princes were made subordinate to the *Mikado*, or supreme ruler of the Empire. This Mikado, or Emperor, is considered of semi-divine origin, and was until quite recently invisible to the people at large.

In 1542 the Portuguese established a settlement at Nagasaki, and the Dutch obtained a temporary footing in 1600, but intercourse with the outside world came to be entirely suspended until about the middle of the present century. Since 1867, several embassies have visited the United States and Europe. In February, 1889, a new consti-

tution was promulgated, establishing important reforms, such as a parliament, the right of suffrage to all men twenty-five years old and over, who pay a certain amount of tax, liberty of religion, of speech and the right to hold public meetings. Judges cannot be removed, except by special legislation.

Japan has shown a remarkable ability to adapt herself to Western civilization. With singular acuteness she has adopted ideas from other countries, and within the last few years has undergone rapid changes. These do not so much affect her form of government as her system of education, and, to some extent, her manners and customs. The Japanese have been called the "Yankees of the Orient."

When war broke out between her and China in 1894, she showed herself fully equipped for the conflict by possessing arms of the most recent type and by being thoroughly versed in the most approved methods of military tactics. Her swift and brilliant victory was anticipated from the first.

BRITISH INDIA

IN the widest sense of the term, British India comprises all that part of the great Indian peninsula which is directly or indirectly under British rule, as well as certain countries beyond that area which are under the control or protection of the Governor-General. The Government of the Indian Empire is entrusted to a Secretary of State for India, assisted by a Council of not less than ten members, vacancies in which are now filled up by the Secretary of State for India.

But the major part of the Council must be of persons who have served or resided ten years in India, and have not left India more than ten years previous to the date of their appointment; and no person not so qualified can be appointed unless nine of the continuing members be so qualified. The office is held for a term of ten years; but a member may be removed upon an address from both Houses of Parliament, and the Secretary of State for India may for special reasons reappoint a member of the Council for a further term of five years. No member can sit in Parliament. Therefore it will be seen that the intention is not to allow the representatives in the Council to have any controlling voice in the affairs of the country, yet they possess a certain influence.

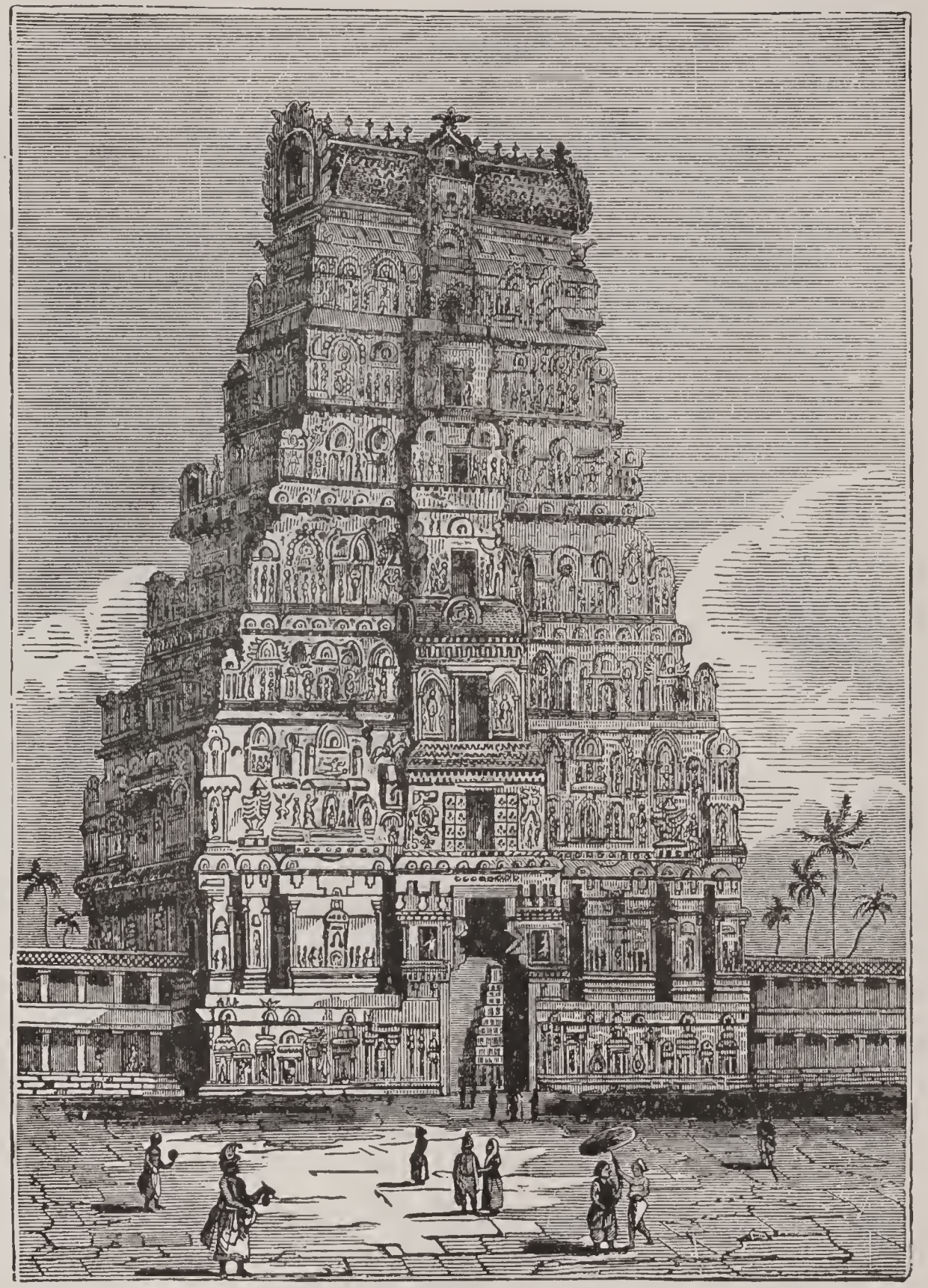
India is the ancient name of all that part of Southern Asia which extended from Persia to Serica (North China). The knowledge possessed of this portion of the world is extremely small, and dates from the expedition of Alexander the Great. Seleucus Nicator extended the conquests of the Greeks beyond the furthest point reached by

Alexander. Ptolemy learned more from subsequent travelers, and his grand division of the country into India Within and Beyond the Ganges has remained to the present day.

From the time of the expedition of Alexander the Great, in the 4th century, B. C., down to the 15th century of our era, the history of India, divided as it was into an infinity of independent states, is of comparatively little interest for the general reader. In 1525 the country was invaded by Baber, who established the Mogul line of princes, whose power culminated under his successor Aurungzebe.

British Arms.

After the latter's death, 1707, the Mogul dynasty began to decline; and after an unsuccessful attempt made by the French to establish their power in India, the foundations of a vast political power were laid between 1750 and 1765, by the greater resources and superior maritime strength of the English. Since that period the history of India presents but a succession of battles fought and territories conquered by British arms.



PAGODA OF CHILLENBAUM, INDIA.

In 1857 occurred the great Sepoy mutiny, which was extinguished after much bloodshed. In the year following, the foreign commerce of India, long a monopoly in the hands of the East India Company, was finally thrown open to the world, and their political jurisdiction vested in the British crown. The assassination of the Governor-General of India, the Earl of Mayo, in 1872, first attributed to political motives, seems to have been only an act of fanaticism. In 1878, over 500,000 deaths occurred at Madras alone by famine.

The costume is in numerous nationalities characterized universally by the ease, lightness and loseness common in the East and

suitable to the hot climate. But it varies in the many provinces, and, indeed, with every nationality. The turban (pagri) has every sort of dimension, from minute neatness to turgid massiveness.

The waistband (dhoti) extends often below the knee, in which case there is no trouser. Jackets in many styles are common. The woman's dress in many respects resembles scarfs and shawls is the prevailing color. As a whole the national dress is picturesque, and a holiday crowd has the appearance of a flower garden.

Four-fifths of the population are affected largely by the caste system connected with the popular religion. A religious sanction in some degree attaches to infant marriage, or child marriage, with all classes; also, to



ENGLISH TROOPS ON THE MARCH IN INDIA.

that of the men. The petticoat is not universal. The headdress is often extended, so as to hang gracefully down the back. The shoe is not always worn; indeed, the humbler classes are generally barefooted. With them the blanket is often a plaid.

The black colors of Europe are seldom seen, but indigo blue is common. Otherwise white, set off by gay margins, and rich

the seclusion of women, and to the prohibition against remarriage of widows with the upper and middle classes.

In practice the women of the masses are not secluded, but, on the contrary, appear everywhere, and work out of doors; they remarry, too, if in widowhood. The burning of widows on the funeral pyres of their husbands has long been suppressed by the

criminal law under British rule. Polyandry is found only among a few of the aboriginal tribes. Old customs, many of them barbarous and cruel, are disappearing before the advance of Christian civilization, but here, as elsewhere, the advance is very slow.

AFGHANISTAN and BELOOCHISTAN

AFGHANISTAN is subdivided into the three separate principalities of Cabul, Candahar and Herat. The Afghans belong to the Iranic race; they are of a vigorous spirit and proud temper. Afghanistan is continually being threatened by England and Russia, both of which nations desire the possession of Herat, which is the key of Central Asia.

The area is estimated at 225,00 square miles. Four-fifths of the country consists of rocks and mountains; the latter from the table-land in the north, varying from 15,000 to 16,000 feet in height and in the case of the Hindoo Coosh, to 20,493 feet.

Beloochistan is subdivided into six provinces. Nearly the whole country is mountainous, except in the northwest and along the coast, its general characteristics being a rugged and elevated surface, barrenness and deficiency of water. The famous Bolan mountain pass, which is the only means of communication with the interior of the country from the plains of Northwest India, is on the northeastern boundary. Kelate, the capital, is situate at 6000 feet above sea level. The products vary with the climate, which is cold in the elevated parts, and excessively hot in the lower valley.

The pursuits of the people are mostly pastoral. The inhabitants consist chiefly of Belooches and Brohooees, two tribes which are probably a race of mixed Tartar and Persian descent. Beloochistan was formerly subjected to Persia, and afterwards to Afghanistan, but its people conquered their independence in 1758. They are ruled by several chiefs, under the more or less nominal authority of the Khan of Kelat.

Products of the Country.

Among the natural productions of Afghanistan is the plant yielding asafœtida. The castor-oil plant is everywhere common, and good tobacco is grown in the district of Kandahar. Aitchison says that the cultivated area around Herat produces magnificent crops of wheat, barley, cotton, grapes, melons and the mulberry tree; the production being only limited by the amount of labor procurable.

Surrounding the villages and in orchards the ash, elm, apricot, apple, plum, quince, peach and pomegranite are cultivated. In special localities are forests of pistachio, its leaves being used in dyeing.

The general appearance of the country during winter is barren and arid in the extreme, owing to the absence of trees and woody shrubs; but in spring a mass of vegetation springs up, giving a grand coloring to the landscape. The industrial products are silk, chiefly for domestic use, and carpets.

The manufacture of *postins*, or sheepskins, is one of the most important of the industrial occupations of the people, and of late years the trade in this article has greatly increased. Afghanistan is crossed by several trade-routes leading to India on the one side, and to Persia and Turkestan on the other; merchandise is carried by camels.

SIAM



LITTLE of a reliable character is known of the early history of Siam. The foundation of Ayuthia, its former capital, dates from 1350, and in the sixteenth century its territorial rule extended from the Cambodia River as far south as the Strait of Malacca. In 1782 the existing dynasty mounted the throne, and in 1855–6, treaties were effected with the United States, England and France, which have largely facilitated foreign trade, opened out the resources of the country, and generally been the means of introducing many of the arts and manners of the Western nations among the Siamese people. The population is estimated at 6,300,000.

The monarchy is absolute and hereditary, and there are two kings, of whom the first is the actual reigning sovereign, the second receiving one-third of the revenue, and exercising the administrative functions of chief minister. Buddhism is the dominant form of religion, and the pagodas of Siam are the finest of all Indian temples. Within the last few years the king has raised a small regular army officered by Europeans; and in time of war the entire adult population are liable to be called out any time for military service.

The men are of an olive color, with little beard; but the women are of a straw complexion. They have been said to excel in the fabrication of gold, in fireworks and in miniature-painting; but in mechanical ingenuity they are decidedly inferior to the natives of China and Cochin-China.

Characteristics of the People.

The chief production of Siam is rice. It is the national food and its export forms a great source of wealth to the country.

The Siamese are very social, vain and fond of bright dresses and jewelry. Their intercourse with each other is conducted with ceremonious attention to distinctions of rank. They shave the heads of their children, with the exception of a tuft on the crown, which is cut off with great ceremony at the age puberty.

Marriages are negotiated by elderly women who find out if the birthdays of the intended bride and bridegroom are suitable, for the Siamese are superstitious in this respect. The marriage ceremonies, during which the chewing of betel-nut plays an important part, last two or three days and

all friends are entertained liberally during this time. The houses are built of wood or bamboo. thatched with palm. Furniture there is none, unless a mosquito net, a mat or two and cooking utensils be reckoned furniture, and these are very crude.

PERSIA

PERSIA dates its rise as a nation from after the fall of the Assyrian and Babylonian Empires, and under Cyrus extended from the Indus almost to Greece and Libya. Conquered by Alexander the Great, it became during several centuries afterward a Greek satrapy ; and about 200 B. C. a Parthian monarchy. In the third century A. D. the native rule was restored under the Sassanides dynasty.

Later, Persia became the prey of the Tartars, the Turks, the Afghans, until redeemed by the victories of Nadir Shah. After the death of the latter the country again became the scene of social anarchy and civil war, which continued till the establishment of the present dynasty. In 1871–2 the more Southern and Eastern provinces were desolated by a terrible drought and famine, which swept away thousands of the inhabitants. In 1873 the Shah visited Europe. Estimated population, 10,000,000.

Some of the immense valleys of Persia abound with the rarest and most beautiful vegetable productions ; among them are wheat of the very best quality, barley and other cereals, cotton, sugar, rice and tobacco. The vine flourishes in many of the provinces, and the wines of Shiraz are celebrated. The mulberry-tree is largely cultivated, silk being one of the most important staples of the country. The chief manufacture is that of silk stuffs, of the richest kinds ; other fabrications include textile goods, arms, carpets, shawls, etc. Persian commerce is very extensive, and chiefly carried on with Russia by way of the Caspian Sea, and with British India by way of the Persian Gulf.

A Despotism.

The government is a despotism under the *Shah*, or sovereign ; and though a large amount of the taxes levied never reaches the royal treasury, yet the latter is reported to possess immense wealth in bullion and precious stones. Mohammedanism of the Shiah type is the prevailing form of religion. The Persian (or Persic) is the most celebrated of all the Oriental languages in respect of strength, copiousness and poetic harmony, and is written from right to left.

The houses in Persia, those of the wealthiest people, not excepted, appear contemptible, being generally built of earth or mud and are grouped, even in the towns, with

little attention to uniformity or order. The interiors, however, of the houses of the rich are sometimes perfect paradises of luxury and elegance. The miserable look of the towns is, moreover, greatly redeemed by the beauty of the gardens which surround them.

THE BARBARY STATES

BARBARY and Egypt formed nearly all of Africa known to the ancients. It was peopled chiefly by Moors, Numidians and Phœnician colonists; it attained great celebrity during the Carthaginian dominion; was afterwards subject to the Romans, and occupied for nearly a century by the Vandals. The Arabs took it finally from the Romans, about B. C. 697.

Barbary is an extensive region, comprising all the northern portion of Africa, from Egypt to the Atlantic Ocean, and from the Mediterranean to the Greater Atlas. It is divided by the Atlas range into two regions, that on the north comprising the four Barbary States, viz., Morocco, Algiers, Tunis and Tripoli; and the southern region, called Beled-ul-Jerid, or Country of Dates.

In this region stood the celebrated city of Carthage in ancient times. Its site was about ten miles northeast of the present city of Tunis. It was founded by Phœnicians, eight hundred and sixty-nine years before the Christian era. The Phœnicians were the first people who engaged in commerce, and founded colonies for the purpose of carrying on trade.

The city of Algiers was built by the Saracens, in the year 944. The Government, called the Regency of Algiers, was founded in 1518, by two Turks, named Horuc and Hagradin. They were brothers, and both bore the name of Barbarossa, or Red-Beard.

American Resistance.

The country now called Morocco was conquered by the Saracens about the same time with the other Barbary States. So also was Tripoli. All these states, except Morocco, afterward fell into the hands of the Turks. During a long period, the Barbary States were in the habit of fitting out vessels to cruise against the ships of other nations. Their prisoners were sold as slaves, and never returned to their own country, unless a high ransom was paid for them.

The Americans were the first who made any considerable resistance to these outrages. In the year 1803, Commodore Preble sailed to the Mediterranean Sea with a small American fleet. He intended to attack Tripoli; but one of his frigates, the Philadelphia, got aground in the harbor. The Turks took possession of the Philadelphia. But one night Lieutenant Decatur entered the har-

bor of Tripoli, and rowed toward the captured vessel, with only twenty men. He leaped on board, followed by his crew, and killed all the Turks, or drove them overboard: the Philadelphia was then set on fire.

After this exploit, Commodore Preble obtained some gunboats from the King of Naples, and with these and the American vessels, he made an attack on the fortifications of Tripoli. The Bashaw of Tripoli was forced to give up his prisoners. In the year 1815, Commodore Decatur—the same who had burnt the Philadelphia—was sent with a fleet against Algiers. He captured their largest vessels, and compelled the Algerines, and the Tripolitans also, to agree never more to make slaves of Americans.

In 1816, Algiers was battered by an English fleet under the command of Lord Exmouth. This was the severest chastisement that the Algerines had ever received at that period. But in 1830, the French sent a large naval and military force against Algiers, commanded by Marshal Beaumont.

The war continued for seventeen years, an Arab leader, by the name of Abd-el-Kader, making a powerful resistance to the French. At length Abd-el-Kader was defeated and taken prisoner; so the country was conquered, and Algiers, under the name of *Algeria*, is now a province of France.

ABYSSINIA

ABYSSINIA was a part of ancient Ethiopia; its inhabitants are of a dark olive complexion. In 1867, the British Government, having wrongs to avenge, sent to Abyssinia an army of 10,000 men; and the expedition resulted in the death of the Emperor Theodorus II., and the destruction of his capital, Magdala.

A few years ago Italy endeavored to plant a colony in Abyssinia. The new colony is nearly self-supporting, but in their endeavor to extend their influence, the Italians came to blows with the Abyssinians whom they had taken under their protection. Abyssinia, the only state of Central Africa with a pretence to civilization, is made up of the territory of a few hundred fierce clans whose chieftains render more or less obedience to the "Negus" or King. The people of that country are nominally Christians, but their rites are strangely mixed with Pagan usages as old as their hills. The main difficulty between Italy and Abyssinia seems to arise out of the determination of the former to put down slavery.

Early in March, 1896, a bloody battle was fought between the Abyssinian troops and the Italian army, in which the latter was utterly defeated with great loss of life, and a check was put upon the ambition of Italy to make for herself a position like other European nations on African soil. The defeat created great excitement in Rome and other parts of Italy, and led to the instant downfall of the Crispi Ministry.

Abyssinia consists of two districts, Tigre and Amhara and Shoa. The country is mountainous, but in the vales the soil is fertile. The rainy season continues from June to September, succeeded without interval by a cloudless sky and a vertical sun,

but cold nights follow those scorching days. Though situate between the tropics, the productions of Abyssinia rather resemble those of the temperate than of the torrid zone. The population is estimated at 3,000,000.

REPUBLICS IN SOUTH AFRICA

ONE of the earliest settlements in South Africa was that of the Dutch at the Cape of Good Hope. In 1806 Great Britain acquired their domain, following which the Dutch emigrated in large numbers, moving north and east. They acquired by force of arms from the Zulas the country known as Natal, where they settled. The number of the Boers, as they were called, who left the British colonies was about 10,000. They organized a government, and in 1854 the British guaranteed them complete independence.

The Boers also established a republic known as the Transvaal, the independence of which was acknowledged in 1852. Here they have remained until the present time. They have had the name of being very exclusive and refusing rights to foreigners who wished to enter their country. In 1887 the British attempted to take the country, and for a while occupied it. In 1880 the Transvaal Boers threw off the British yoke and re-established the republic, after a conflict with the British, in which the latter were defeated with great loss.

Early in 1896 a British company, with possessions bordering on the Transvaal, attempted to conquer the Boers. In this attempt they were led by Dr. Jameson, but his force was signally defeated. This disaster caused excitement throughout England, especially as Germany expressed its sympathy with the Boers.

The population of the Transvaal is 119,128 Europeans, of whom half are Dutch. The native population is 560,000.

The state has immense latent wealth in its minerals, for, in addition to the numerous gold-fields the deposits of silver, copper and lead, iron, coal, cobalt, and other metals and minerals, are sufficient to show that nature has favored the Transvaal beyond all African States. The country is rich in corn and pasture land. The climate is, as a rule, healthy, and in some parts exceptionally bracing. The number of English-speaking residences is fast increasing on account of emigration.

Republic of Liberia.

Liberia is a small Republican State of West Africa and occupies a part of the coast of North Guinea. Length, 600 miles; breadth interiorward, 50 miles. Monrovia is its capital, at the mouth of St. Paul's River. The principal exports are coffee, sugar, palm-oil, camphor, indigo, ivory and gold dust. The population consists of 20,000 "Americo-Liberians" (immigrants from America and their descendants) and 600,000 aborigines. The first settlement was formed by free negro colonists from the United States, at Cape Mesurado, in 1820. The colony became an independent republic

in 1847. The constitution and government are based upon the model of those of the United States.

The Congo Free State has sprung out of the discoveries of Stanley and the explorations of the International Association, founded at Brussels for the opening up to civilization of the Congo and its tributaries. Its autonomy was recognized during 1884 and 1885 by the leading powers of Europe, and by the United States, conditioned upon its maintaining the principles of free trade. There are twelve territorial divisions, the capital being Boma.

The central government is at Brussels, and consists of the King of the Belgians as sovereign, and three departmental chiefs. On the Congo there is an Administrator-General and several European administrators of stations and districts. The rest of West Africa is variously "protected" by England, France, Germany and Portugal.

CAPE COLONY



CAPE COLONY is an extensive territory belonging to Great Britain, comprising the greater portion of the South African continent. It has an area of 183,286 square miles, with a coastline of 1,150 miles. The entire country consists of three elevated plateaux intersected by three great mountain-chains, between two of which is what is called the Great Karroo, a desert plain nearly 500 miles long by 100 broad. The principal rivers are the Orange, Great Fish River, Elephant, and their affluents. Saldanha Bay is by far the best harbor on the coast. Minerals are known variously to exist, but have been hitherto little mined. Some gold has been found, together with diamonds and and other precious stones. The products are fruits, tobacco, wool, etc. Sheep-farming is the staple industry of the country. The chief towns are Cape Town (the capital), Grahamstown, Zwellendam.

The aborigines consist of Hottentots and Caffres; the colonists are chiefly English, Dutch and French. Cape Colony is governed by an English viceroy, and is an important British military and naval station, being considered the key to the Indian Ocean. In 1650, the cape was colonized by the Dutch, from whom it was taken by the English in 1795, and finally ceded to them in 1815. Population, 566,158.

Ostrich-Farming.

Ostrich feathers have long been an article of export from the Cape. For many years they were obtained at the expense of the death of the birds, but in 1864, ostrich-farming was commenced at the Cape and is now one of the leading industries. The feathers of the wild bird are more beautiful than those of the tame bird, and are recognized at once by those engaged in the feather trade. A few elephants and buffaloes are still preserved.

MADAGASCAR

MADAGASCAR is the largest of the African islands, situated to the east of the continent, from which it is separated by the Mozambique Channel, and surrounded by the waters of the Indian Ocean. It contains a population of about 4,000,000. It is 1010 miles in length, and 370 at its greatest breadth, containing an area estimated at 228,540 square miles.

The island was known to the early Arabs as Jezira-el-Komr, and became known under its present name through Marco Polo. Its actual discovery is due to the Portuguese, 1506. By a treaty signed at Tamatave, December 12, 1885, Madagascar was declared a French protectorate, and a port on Diego Suarez Bay was ceded to France, now converted into a naval station. The British acknowledged the French protectorate of Madgascar in 1890.

The soil is fertile, with rich pasturage, and magnificent forests abounding in valuable trees and medicinal plants; the other products are rice, sugar, silk, cotton, cocoanuts, bananas, sweet potatoes, indigo, pepper, India rubber, etc. Iron ore is found in several places, and coal is also said to exist; gold, silver, copper and lead are also found in small quantities. The principal manufactures are jewelry, chains, necklaces, straw hats and dresses, termed lambas.

AUSTRALIA

AUSTRALIA is an immense island, containing 3,000,000 of square miles, and is about as extensive as all the United States. The natives of Australia are described as the most degraded people in the world. They are black, and have frizzled hair like negroes; and they have very lean arms and legs. Their features have a resemblance to the monkey tribe, and they are said to be not much handsomer or more intelligent than the orang-outangs found in the Malaysian Islands.

This great island was discovered by the Dutch, in 1610, but the whole of it is now claimed as a territory of Great Britain. Captain James Cook, the celebrated naviga-

tor, took possession of it in 1770. It is divided into North Australia, Western Australia, South Australia, Victoria, Queensland and New South Wales. The latter began to be settled in 1778. It was then called Botany Bay.

The first colonists were not a very respectable sort of people. The English Government conceived the plan of sending criminals to Australia, instead of keeping them in jail, or sending them to the gallows. Accordingly, ship-loads were transported every year. This cannot be considered a severe punishment, for the soil of Australia is fertile, and the climate is delightful. During many years there were hardly any honest men in the new colony. Few of the inhabitants felt any reluctance to commit crimes, or were ashamed to be found out; for they knew that their neighbors were as bad as themselves. In later years, however, the people began to improve. The children of the convicts were now growing up, and their parents had taught them to be more virtuous than they themselves had been.

Criminals became so numerous in Australia, that it was found necessary to plant new colonies of them; and in 1804 Tasmania was appropriated to that purpose. In the year 1853 the home government abandoned the practice of transportation for crime. In 1850, rich gold mines were found in Australia, which caused a sudden and extraordinary prosperity in these colonies. Many millions of dollars, in gold, are now sent from this island to Great Britain every year.

OCEANICA

OCEANICA comprises what may be called the fifth division of the globe, including the great island of Australia and a majority of the smaller islands lying between the Indian Ocean and the China Sea on one side and the Western world on the other. A sketch of Australia has already been given; others may be noticed as follows:

New Guinea was discovered by the Portuguese in 1511. It is now divided between Holland, England and Germany; the German portion is called Kaiser Wilhelm's Land.

Borneo, which, until the naturalist Wallace's explorations proved that New Guinea had the greater area, was believed to be the largest island in the world except Australia, was discovered in 1578 by the Portuguese. In 1690 they effected a settlement, but were soon driven out from it. In 1702 and 1774 England made unsuccessful attempts to

colonize the island, but of late years she has managed to acquire a controlling influence over the northwestern coast of the island.

Sumatra, Java, Celebes are among the larger single islands, while among the most important groups are the Malay Archipelago, in which these are included, and almost all of which have been subjugated by the Dutch, the Spaniards, the Portuguese and the British; the New Hebrides and Polynesia, which general terms include, among others, the Hawaiian, which is one of the most important in the Pacific Ocean. In 1829 the independence of these islands was acknowledged by the United States, who were followed in 1843 by the British and in 1844 by the French. Queen Liliuokalani, who succeeded Kalakaua, was deposed in 1894 and a republican form of government was adopted.

New Caledonia, an island lying to the east of Queensland, was taken possession of in 1853 by the French, who established there a naval station and a penal colony, which are still maintained.

New Zealand was first visited by the Dutch navigator Tasman in 1642. A colony was first established in 1840. Gold fields were discovered in 1857 which brought a large immigration. Executive authority is vested in a Governor appointed by the Crown; there is also a General Assembly consisting of a Legislative Council and a House of Representatives.

Tasmania, formerly known as Van Dieman's Land, ceased being a penal colony in 1853, since which time its population and prosperity have largely increased. A Governor appointed by the Crown holds the executive; there are also a Legislative Council and a House of Assembly.

VENEZUELA

COLUMBUS on his first voyage discovered the Paria coast on the 31st of July, 1498. The next year the whole Venezulean coast was skirted by Ojeda and Amerigo Vespucci,and the name "Little Venice" was given to an Indian village built on piles (as is common) on the shores of Lake Maracaybo; this is the origin of "Venezuela," the name now of the whole country.

In 1527 the territory of Coro was pledged by Charles V. to the Welsers of Augsburg, whose governors and adventurers had eyes and thoughts only for gold and the fabled El Dorado. In 1558 the Crown resumed possession; Caracas was founded in 1567, and in 1578 became the seat of government.

During the 17th century the attentions of the Crown were limited to extracting as much revenue from the colony as possible, while the people entered earnestly on agriculture and stock raising, and the various religious orders arrived and partitioned out the territory among themselves.

But the next century saw the beginning of troubles. The government insisted on all trade being carried on with Spain alone, and ultimately with only one city—first Seville, then till 1778, Cadiz. Legitimate commerce dwindled away, and smuggling by the

Dutch and English alone interfered to keep down the enormous prices of European goods. The first revolt occurred in 1749; other outbreaks kept the land in a ferment, until in 1810 the revolution began which ended in the independence of the country and the withdrawal of the royal forces in 1821.

From 1870 to 1877 the "Illustrious American," General Guzman Blanco, was first dictator and then president, and did much to rescue the country from its embarrassments. Joaquin Crespo is the present ruler.

There has never been any agreement between Great Britain and Venezuela as to the boundary line between the latter country and British Guiana. The Venezuelan Government represented to ours at Washington that Great Britain was disposed to make encroachments and claim territory that did not by right belong to her.

In December, 1895, President Cleveland sent a strong message to Congress on this subject, in which he took occasion to assert in very plain terms the Monroe Doctrine. The message was received with great favor, and a commission of investigation was appointed by Congress. For a time there was loud talk of war between Great Britain and the United States, but wiser counsels prevailed, and Great Britain furnished the commission with all information in its possession, which could be of service in reaching a just and equitable conclusion. Population of Venezuela, 2,270,000.

BRAZIL

ALONG the sea coast and banks of some of the rivers, besides some extensive tracts in Minas-Geraes, the country has been brought under cultivation; but by far the greater portion of the surface remains in a state of nature. The dense forests furnish almost every variety of useful and ornamental timber, more than one hundred species of palms, logwood, mahogany, Brazil, and numerous other dye-woods, with sassafras, sarsaparilla, ipecacuanha, and a great variety of other drugs. Cocoa is an indigenous product; maize, sugar, coffee, cotton, rice, wheat and tobacco, have been introduced by European culture.

The animal as well as the vegetable products here present the greatest diversity. The diamond mines of Minas-Geraes are at present the most productive known. Other gems, and large quantities of gold, besides silver, copper, iron and platinum, are among the mineral riches of the same province. Manufactures in Brazil are confined to cotton-weaving, tanning, and the production of goods of primary necessity.

Brazil was discovered on the 26th of January, 1500, by the Spaniards under Pinzon, one of the companions of Columbus. In the same year the Portuguese fitted out an expedition to follow up the successful discoveries of Vasco de Gama in the East, and finally took possession of the country in 1640.

In 1808 the royal family of Portugal was expelled by the French and took refuge in Brazil, and the first act of Dom Joao VI.,

was to open Brazilian ports to foreign commerce. Other wise and liberal measures greatly stimulated the growth of the country. In 1822 he was succeeded by his son who was proclaimed and crowned Emperor as Dom Pedro I. His reign, however, was not a fortunate one. Vexed with the opposition he encountered he abdicated in 1831 in favor of his eldest son Dom Pedro II.

After a brief government by regencies, Dom Pedro II. was crowned in 1840. He proved to be a wise and liberal ruler and was popular with his people until the revolutionary disturbances of 1895, when he fled to Europe where he soon afterward died. The population of Brazil is 14,000,000, and a good deal of enterprise is shown in developing the resources of the country.

PERU

PERU is, for the most part, of igneous formation and contains a number of active volcanoes, that of Omati being the principal. Earthquakes are frequent and violent. Lying off the coast near Callao are the Chincha Islands, which, with those of Guadafe and Macabo, yield guano in vast quantities. Agriculture is much neglected, although the land is productive of excellent coffee, cocoa, cotton; besides drugs, tobacco, pimento, dyestuffs, etc. The chief articles of export are, after guano, gold, silver, wine, sugar, quinine, wool, etc.

When Pizarro, at the head of a small band of Spanish adventurers, first landed on the shores of Peru, 1532, he found it governed by sovereigns called Incas, who were looked up to by their subjects with awe and veneration; and the inhabitants were distinguished for their mild and polished manners. But the avarice of their European conquerors led to scenes of blood and desolation; the last Inca, Atahualpa, was put to death, and the Peruvians became the victims of the most unheard-of cruelties.

After being for nearly three centuries a Spanish viceroyalty, Peru, in 1821, along with the rest of Hispaño-America, achieved its independence. In 1864, the Spaniards seized the Chincha Islands until Peru should make reparation for injuries inflicted upon Spanish subjects, and held them till 1866, when Peru agreed to pay an indemnity of 60,000,000 reals. This treaty was not ratified, and an alliance entered into with Chile. After war for nearly three years, peace was restored in 1869 by the intervention of the United States. In 1881, war broke out between Peru and Chili, resulting in the defeat of Peru, and the occupation of portions of the country by the Chilean army.

As a Republic.

On June 3, 1886, General Caceres, who had gallantly defended his country against the Chilians from first to last, became constitutional president of Peru. His policy was retrenchment and the protection of the Indian population. Payment of interest of the foreign debt had become impossible. General Caceres served his term of office, and was peacefully succeeded as president, on August 10, 1890, by Colonel Don Remijio Morales Bermudez. Peru is thus slowly

recovering from the disastrous effects of a great calamity.

The natural resources of the country are being developed, a greater interest is taken in public affairs, and with a more stable government, supported by the popular will, there is reason to predict a bright future for Peru.

CHILI

THE backbone of this country is found in the Great Cordillerras of the Andes, here attaining an average height of 14,000 feet, many of whose peaks are volcanic, notably that of Aconcagua (the highest Andean summit), which has an altitude of 23,910 feet above the sea. The coast-line presents steep and rocky shores, broken into by some excellent harbors. The rivers and lagoons are so small as to be undeserving of mention. Climate healthy, taken, as a whole; a scarcity of rain is, however, often felt. Earthquakes are of common occurrence; the last great shock doing much damage in 1868.

Chili is one bed of metals: silver, gold, lead, and iron are found largely and worked; copper, however, is the principal resource of the national wealth, and is mined by Englishmen on an immense scale. Sulphur, antimony, zinc, manganese, alum, nitre, salt, coal, are other mineral items which influence a large exportation. The soil is of varying fertility, fattening most towards the South and the foothills of the Andes.

Many hard woods are made useful, instead of iron, and the fruits of the temperate zone thrive excellently. The Chileños have thriven greatly since their emancipation from Spanish rule: the bulk of commercial transactions is carried on with Great Britain.

Valparaiso is the chief port, Santiago is the capital; Valdivia, Concepcion, Talca are among the largest and finest towns. The government is formed on the constitution of 1833, and consists of three departments—the executive, legislative and judicial. The first is in the hands of a president, whose tenure of office is five years; the legislature consists of a Senate and Chamber of Deputies. The state religion is the Roman Catholic; other religions are tolerated, but their public exercise is not allowed. Chili, before the Spanish irruption, belonged to the Incas of Peru; in 1535–1540, its whole extent, excepting only Araucania, was conquered by the lieutenants of Pizarro. It thenceforward become a Spanish colony, until 1817, when, after a seven years' war with Spain, the victory of Maypú, gained by General San Martin, secured the independence of the country. At present Chili is the most flourishing of all the Hispaño-American republics.

Climate and Scenery.

The temperature of Chili is remarkably even and pleasant and always cool at nights. In the south it is dry for about eight months in the year and rainy the other four. Vines grow well on the hillsides and are a source of large income. The Andes are almost everywhere visible, covered with perpetual snow. There are many volcanic peaks, mostly extinct. Chili is subject to frequent shocks of earthquake and occasionally to

destructive tornadoes. The railway system of Chili is well developed, and in the northern provinces there are several mineral railways belonging to English companies. The Constitution of Chili is Republican and based upon that of the United States.

UNITED STATES OF COLOMBIA

FORMERLY known as New Granada, the United States of Colombia is one of the most progressive of the South American Republics. It lies in the extreme northwest angle of the continent. On the north is the Caribbean Sea; on the northeast and east, Venezuela; on the southeast and south, Brazil and Ecuador; and on the west, the Pacific and Costa Rica. Its extreme length from north to south is 1000 miles, and the extreme breadth from east to west, 760; on the Isthmus of Panama, however, the breadth is but 28 miles. It has an area estimated at from 480,000 to 520,000 square miles. The population by the last census was 2,880,633. Of these, rather less than a million are whites, and about an equal number have a large admixture of Indian blood. The remainder are civilized Indians, mulattoes, savage Indians, and the various crosses between whites, Indians and negroes.

The form of government established by the constitution of 1863 resembles in many respects that of the United States. The president is elected for two years. The Senate consists of three members from each of the states, and the lower house of delegates from the several states, each sending a member for every 50,000 inhabitants. Each state has its own legislative and executive officer.

CENTRAL AMERICA

UNDER the head of Central America the countries embraced are the Republics of Guatemala, San Salvador, Honduras, Nicaragua and Costa Rica. They declared their independence September 21, 1821, and separated from the Mexican confederation July 21, 1823. The states made a treaty of union between themselves March 21, 1847. There has been among them since much anarchy and bloodshed, aggravated greatly by the irruption of American filibusters under Kenny and Walker, 1854–5.

In January, 1863, a war began between Guatemala (afterward joined by Nicaragua) and San Salvador (afterward supported by

Honduras). The latter were defeated at Santa Rosa, June 16th, and San Salvador was taken, October 26th; the President of San Salvador, Barrios, fled, and Carrera, the dictator of Guatemala, became predominant over the confederacy. General Barrios, President of Guatemala, attempts the union of the five states, himself to be dictator, opposed by all except Honduras, February. He is defeated and killed in a prolonged battle at Chalchuapa, April 2d; peace with the states signed April 16, 1885.

CUBA

"GEM of the Antilles," as Cuba has long been called, it is at once the largest, most picturesque and inviting of all the West India Islands. Here are scenes of tropical loveliness, plantations with fertile soil and thrifty products, flourishing towns and beautiful harbors, a mixed population comprising all social grades and all degrees of intelligence.

The insurrection going on in Cuba in 1895 and 1896, aroused the sympathies of the American people. Spain sent a large army to beat back the rising tide of patriotic impulse and hold the island still under her domineering rule. Secret expeditions were fitted out from the United States, and the sympathy for the Cuban cause expressed in Congress stirred the hot blood of the proud Castilian and mobs in different parts of Spain assaulted and dishonored the American flag.

Cuba was discovered by Columbus in 1492. The Spanish settlement was consummated in 1512, and the culture of sugar-cane and tobacco introduced about 1580. American filibustering expeditions against the island occurred in 1850–51, both of which ended disastrously to their projectors. Owing to the oppressive rule sanctioned by the home government, the island broke out into revolt in September, 1868, and her people, declaring their independence, formed a so-called National Junta, and appointed Don Manuel Cespedes their commander-in-chief.

Years of Warfare.

A sort of guerrilla warfare was thus initiated, and carried on until 1878, marked by random engagements and resultant massacres on both sides. Since October, 1868, about 90,000 soldiers have been sent to Cuba from Spain, of whom scarcely 15,000 survived. In addition to these, nearly 100,000 were sent in 1895–96.

The soil is fertile in the extreme; forests of vast extent are interspersed over the interior, presenting a vegetation almost unequalled for luxuriance and variety. The climate is hot and variable; hurricanes and shocks of earthquake are frequent. Sugar is the chief staple followed by tobacco, coffee, rice, maize, tropical fruits and vegetables.

The Cobre mines yield large supplies of copper-ore, and coal, bitumen and varieties of marbles and valuable stones are found. Sugar, rum, molasses, cigars and applications of wax are the manufactures. The heroic effort of the Cubans to throw off the yoke of Spain, beginning in 1895, aroused the sympathies of the American people and for a time threatened complications between this country and the government at Madrid. Spain sent over 200,000 troops to Cuba to quell the insurrection, but the heroism displayed by the Cubans prevented the success of the Spanish army. Even the death of the famous Cuban leader, Gen. Antonio Maceo, who was lured into ambush and shot, failed to dispirit the insurgents, who gallantly continued their struggle for independence.

HAWAII
OR
THE SANDWICH ISLANDS

UNUSUAL interest was awakened throughout America by the agitation in Hawaii, or the Sandwich Islands, which resulted in the overthrow of the monarchical government and the establishment of a Republic.

In 1843 the independence of the government was formally guaranteed by the English and French. A line of monarchs followed, the last male member of which was King Kalakaua, who died at the Palace Hotel, in San Francisco, January 20, 1891.

It was his travels and extravagance that caused the financial troubles which led to a change in the form of government. Princess Liliuokalani, who succeeded her brother, proved herself to be an erratic and self-willed ruler. She was constantly at variance with her legislature and advisers, and in January, 1895, attempted to promulgate a new constitution, depriving foreigners of the right of franchise and doing away with the existing House of Nobles, at the same time giving herself power of appointing a new house. This was resisted by the foreign element of the community, who at once appointed a committee of safety consisting of thirteen members, who called a mass meeting of their class, at which twelve or fifteen hundred persons were present.

The Queen Condemned.

That meeting unanimously adopted resolutions condemning the action of the Queen and authorizing a committee to take into further consideration whatever was necessary to protect the public safety. The committee issued a proclamation to the Hawaiian people, formed itself into a provisional government, took possession of the national property and sent commissioners to the United States, inviting this republic to annex the islands. A treaty to that end was proposed by President Harrison in February, 1893.

When Mr. Cleveland entered upon his second administration he set this treaty

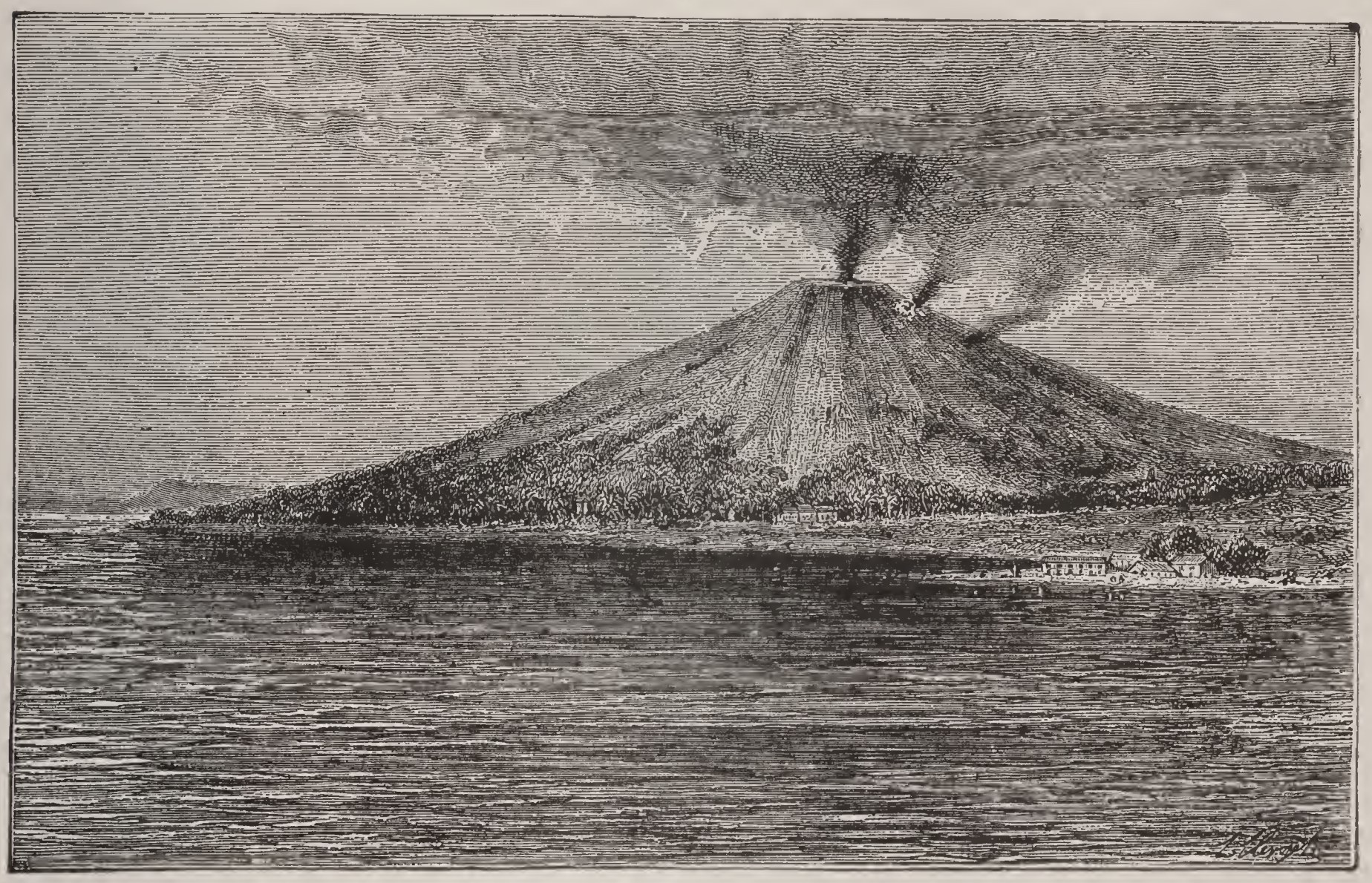
aside and was openly accused of expressing sympathy with the party who favored the retention of the Queen upon the throne. The new form of government, however, has existed, and the islands are now under its control.

The Sandwich Islands are thirteen in number, the eight principal of which are inhabited, viz., Hawaii, Oahu, Maui, Molokai, Lanai, Nihau, Kahoolani and Atuai. Hawaii, the largest of the group, contains the capital. Honolulu has an area of about 4000 square miles, and embraces within its limits two of the largest volcanic mountains in the world—Mouna Loa and Mouna Koa—each with an elevation of about 14,000 feet above the sea. These islands are very fertile, producing grain, coffee, sugar, cocoa, arrow-root, tobacco and fruits; while on their fine pastures great quantities of cattle are reared to supply the needs of merchant-vessels.

The Sandwich Islands constitute a calling place (Honolulu) for the mail-steamers which ply between San Francisco, Japan and China. The inhabitants are of the pure Polynesian (Malay) type. Discovered by Captain Cook in 1778, they were erected into a constitutional monarchy in 1840.

Lying as they do in the middle of the Pacific Ocean, the Hawaiian Islands, though within the tropics, enjoy a fairly temperate climate. Rains, brought by the northeast trade wind, are frequent on the side of the mountains which faces that quarter, but on the other parts of the islands little rain falls, and the sky is generally cloudless. The yearly rainfall at Honolulu, being on the leeward side of Oahu, is under forty inches; that of the islands generally about fifty-four inches.

The soil, whose constituent parts are mainly scoriæ, decomposed lava and sand,



THE GRAND MAUNA LOA IN ACTION.

is generally thin and poor, but at the bases of the mountains and in the valleys there are extensive tracks as fertile as they are beautiful. In Hawaii alone, on the Waimea plains, thousands of sheep of the merino breed find grazing ground; and on most of the islands, while the upland slopes of the mountains are clothed with dense forests, the lower levels spread into grassy plains rich with sugar and rice plantations.

The islands are separated from other lands by a broad expanse and great depth of sea, consequently their natural history has many special features of its own. In the high mountains there are some species of plants akin to those of the American continent. The forest trees are mainly to be found on the windward, being the rainy side of the mountain ranges. Tropical fruits are numerous. There are now, as has been stated, numerous sugar and rice plantations on the islands.

The staple food of the natives consists of *poi*, a kind of thick paste made from the root of the taro plant and raw or dried fish. The only indigenous animals are rats, mice, bats, dogs and hogs, but others have been added since white men came to the islands; cattle, sheep, etc., having been introduced by Vancouver and other navigators. There are large numbers of semi-wild horses in the kingdom, and in some parts of the mountains wild dogs are also to be found.

Reptiles are few, including on land one species of the lizard and a few of the gecko; and the native birds, of which there are nineteen species, are rapidly disappearing, though foreign importations more than supply their place. The archipelago has unfortunately no mineral resources. Coral rock is the material chiefly used for building purposes, and to a less extent, basalt, compact lava and sandstone. There is a large variety of sea-shells, some of which are of exquisite beauty and loveliness.

ASTRONOMY

How to Read the Sky

THE most exact, as well as the most sublime of all the sciences, is astronomy. Where are the souls to whom the spectacle of starry night is not an eloquent discourse? Where are those who have not been sometimes arrested in the presence of the bright worlds which hover over our heads and who have not sought for the key of the great enigma of creation?

The solitary hours of night are in truth the most beautiful of all our hours, those in which we have the faculty of placing ourselves in intimate communication with Nature. The orb of day conceals from us the splendors of the firmament; it is during the night that the panoramas of the sky are open to us. At the hour of midnight, the heavenly vault is strewn with stars, like isles of light in the midst of an ocean extending over our heads.

In the vaporous darkness our eyes gaze freely on the sky, piercing the deep azure of the apparent vault, above which the stars shine. They traverse the white constellated regions, visiting distant realms of space, where the most brilliant stars lose their brightness by distance; they go beyond this unexplored expanse, and mount still higher, as far as those faint nebulæ whose diffused brightness seems to mark the limits of the visible. In this immense passage of sight thought is carried away by its flight and wonders at these distant splendors.

It is then that thousands of questions spring up in our minds, and that a thousand points of interrogation rise to our sight. The problem of creation is a great problem! The science of the stars is a sublime science; its mission is to embrace all created things! At the remembrance of these impressions, does it not appear that the man who does not feel any sentiment of admiration before the picture of the starry splendor, is not yet worthy of receiving on his brow the crown of intelligence?

No one can study the human frame, its marvelous bones, joints, muscles, arteries, nerves; its breathing lungs and beating heart, sending its thrill of life through every fibre of the complicated system, without being led to the thought of an all-wise Creator. Far more true is it, if possible, that "an undevout astronomer is mad."

Of all the sciences astronomy is the one which can enlighten us best on our relative value, and make us understand the relation which connects the earth with the rest of creation. Without it, as the history of past centuries testifies, it is impossible for us to know where we are or who we are, or to establish an instructive comparison between the place which we occupy in space and the whole of the universe; without it we should be both ignorant of the actual extent of our country, its nature, and the order to which it belongs. Enclosed in the dark meshes of ignorance, we cannot form the slightest idea of the general arrangement of the world; a thick fog covers the narrow horizon which contains us, and our mind remains incapable of soaring above the daily theatre of life, and of going beyond the narrow sphere traced by the limits of the action of our senses.

A Universe of Wonders.

On the other hand, when the torch of the Science of the Worlds enlightens us, the scene changes, the vapors which darkened the horizon fade away, our mistaken eyes contemplate in the serenity of a pure sky the immense work of the Creator. The earth appears like a globe poised under our steps; thousands of similar globes are rocked in ether; the world enlarges in proportion as the power of our examination increases, and from that time universal creation develops itself before us in reality, establishing both our rank and our relation with the numerous similar worlds which constitute the universe.

The sun, which so many have worshiped, and which is, humanly speaking, the source of life to us all, is a perpetual wonder. Its circumference is about two million seven hundred and seventy thousand miles. Its distance from the earth is so great that a railway train moving at thirty-two miles per hour would take three millions of hours, or three hundred and forty-two years and three months, to travel from us to the sun, supposing that it could travel incessantly night and day during that time. When arrived, it would be rather more than a year and a half in reaching the sun's centre; three years and a quarter in passing through the sun, supposing it was tunnelled through, and ten years and one-eighth in going round it. How great these dimensions are, may be conceived from the statement, that the same train would attain the centre of the earth in five days and a half, pass through it in eleven days, and go round it in thirty-seven days. A cannon ball, moving fifty times faster than such a train, would expend seven years in reaching the sun.

Vast Size of the Sun.

To make a globe like the sun it would take one million four hundred thousand globes like the earth rolled into one! Or, to make these facts simpler, and yet more stupendous, the bulk of the sun is five hundred times greater than the aggregate bulk of all the other bodies of the solar system of which night only reveals to us a small part —that which appears above our hemisphere and above our particular standpoint. The centre of the sun is a dark mass covered with a garment of flame. But in this luminous matter there are vast rents. We talk of spots on the sun; spots indeed! the space occupied or laid bare by the principal spot is nine hundred and twenty-eight million square geographical miles.

Arago, by a physical test, proved that this garment of flame, this luminous matter, must be gaseous; so that the sun floats in an ocean of flame, and this is so powerful that the strongest blast furnace yet ignited by man, at its highest power, is seven times

weaker than the sun's heat at its surface. If the heat be electric, how great is the wonder! being dispersed over space so great that the earth's surface, at a distance of ninety-one million miles, notwithstanding the alternation of night, receives in a year sufficient, if uniformly diffused, to liquefy a crust of ice one hundred feet in thickness.

When we come to examine the sun by the aid of a telescope, we find that all parts of the surface do not give out light to the same extent, and that there are certain places on it darker, and some brighter, than the remainder of the disk. The former are sunspots, the latter faculæ.

The Sun Revolves.

The first person who examined sunspots closely was the illustrious Galileo, who proceeded to determine from them the sun's velocity of rotation on his axis; for he perceived that they moved across the sun's body. However, since his time, it has been shown that the spots have a motion of their own; those at the sun's equator moving faster than those at his poles; so that observations on the spots alone cannot tell us the rapidity of the revolution of the sun's entire mass.

It has also been noticed that the number of these spots visible at one time does not remain the same from year to year, and, in fact, that about every ten years there is an epoch at which they are especially abundant. General Sabine has pointed out that these periods of frequency of sunspots are coincident with the periods of greatest magnetic disturbance on our own globe. Accordingly, we see that there exists a distinct and close connection between variations in the appearance of the sun, and changes in the physical constitution of our earth.

The interesting question now arises: what are the sunspots? and what is their cause? The very careful investigations of science have thrown much light upon this interesting subject. One of the most remarkable features of the spots is, that their central portion is darker than the edge; and accordingly, nearly a century ago, it was suggested that they were pits in an envelope which surrounded the sun. The results of later experiments seem to confirm this idea. They further go to show that the faculæ, or bright patches, are really of the nature of luminous clouds, placed, relatively to the sun, above the level of the spots.



THE SUN AND ITS REMARKABLE SPOTS.

These faculæ are generally seen behind the spot, a position which they would neces-

sarily assume if they were thrown up to a greater distance from his centre, and would move more slowly. The same observations have shown that spots are produced below the level of the sun's photosphere, while the faculæ are suspended in that medium. If this be admitted, it seems to follow that the two phenomena are effects of a vertical circulation in the gaseous matter surrounding the sun, the faculæ being produced when a portion somewhat denser than the medium in which it is suspended is raised into or above the photosphere, while spots are observed when such a mass is below the photospheric stratum. In fact, one of our diligent sun observers has seen a faculæ, apparently in the act of sinking, lose its brightness and gradually pass into a spot, its form remaining unchanged during the process.



A TYPICAL SUN-SPOT.

There is a shorter period of twenty months' duration observable in the recurrence of spots, and this coincides with the periods of recurrence of the same relative position of Venus as regards the sun and the earth. The same is true of Jupiter.

Brotherhood of Worlds.

These discoveries are of the greatest interest, as they show us how intimately all the bodies of our solar system are related to each other, and how the slightest change in any one of them exerts a definite influence on the condition of the entire system, despite their great magnitude and distance from each other.

Let us see then in what the spots of the sun consist. Generally, this is the aspect which they present to us in the field of the telescope, as seen in the accompanying engraving.

Two very distinct portions are noticed; at the centre a well-defined black region. Around it a region not so black or grayish compared with the surface of the sun which surrounds it. The central part has received the name of "umbra;" sometimes at the centre of this part is noticed a more intense dark spot, which is called "the nucleus."

The exterior region of the spot has received the name of "penumbra." When it is stated that the centre of the spot is black, this expression must be understood as relative to the general surface of the sun; for this centre, however dark it may appear by contrast, has been found of a light equal to two thousand times that of the full moon.

Enormous Gulfs.

We may be led to the belief that these spots, generally invisible to the naked eye, are insignificant movements carried on on the sun's surface, and of small extent. It is not so. They are daily and very important phenomena. Some of them have been known to measure 80,000 miles, that is to say, they are ten times larger than the earth. Our globe falling into most of them would be lost as in a well. Besides being of this size, they are also the seat of various actions and prodigious phenomena.

They are not formed suddenly as a whole, but increase to the limit they attain, and afterwards diminish. Some only last a few weeks, others months. Now, the movements with which they are animated, either for their increase or diminution, or in their internal action, are sometimes of unheard-of rapidity. Lately, astronomers have followed a dazzling meteor passing throuph a group of spots with a velocity of eight thousand miles per minute. In other parts, they have watched circular whirlwinds, dragging into their commotion large spots like the earth, and swallowing them up in abysses with fearful velocity.

Sometimes are seen the crests of stormy waves extending over parts of the penumbra, and rising on the white surface of the sun as a still whiter and brighter substance, doubtless projected in their ebullition by interior forces. There have, besides, been seen immense bridges of fiery substances cast suddenly over a black spot, crossing it from one end to the other, like an arch of luminous striæ, which sometimes is dissipated, and falls down into the abysses of lower whirlpools.

This body, which each day pours out over our heads such a pure and calm light, is the seat of powerful actions, and prodigious movements, of which our tempests, hurricanes and waterspouts give us but a slight idea; for these gigantic disturbances are not performed, as here, in an atmosphere of a few miles thickness and over a few miles area, but in proportions as vast as its volume. One of the first results of the observation of solar spots was to discover that the sun turns on its axis in about twenty-five of our days.

Rapid Movement of Sun-spots.

Indeed, if we watch for several consecutive days any of the spots visible on the solar surface, or a group of spots, or even the whole sun, we shall not be long in remarking that the spots are all animated with the same movement from one edge to the other of the solar disk. If, for instance, we begin to follow a spot from its appearance at the eastern edge, we observe that it advances slowly towards the middle of the body, which it reaches about seven days after its appearance; then it passes it, and continues its course towards the west, and seven days afterward it reaches the edge and disappears.

After a period of fourteen days, employed in traveling over the opposite hemisphere, it reappears at the same place, and follows the path previously pointed out. These observations evidently show that the sun turns on an axis. This rotation of the sun shows its spots in the following manner: If the period of the reappearance of the spots is from

twenty-five to twenty-eight days, this does not refute the number of twenty-five days before mentioned.

The difference proceeds from the earth not remaining immovable in space, but turning round the sun. Now, in its translatory movement round the sun, the earth advancing in the direction of its rotation, sees the spots two days and a half after they have disappeared at the point where the earth was at the commencement of the observation.

The Sun's Eternal Day.

This rotary movement takes place from west to east, like that of the earth and all planets of the system. Thus, by telescopic examination, this body declared fixed and incorruptible in antiquity, is stripped of its two distinctive qualities. The diurnal rotation of the sun is twenty-five times longer than that of the earth; but it differs essentially in its immediate consequences, because it does not produce on the surface the alternate day and night, which we derive from this movement. It cannot, then, be stated that this is the length of the solar day, for it is not the sign of a succession of light and darkness: the sun's day does not go out, and the twilight of evening does not pale it. This world lives in a permanent light.

It neither knows our seasons nor years, and the elements of our calendar cannot be applied to its astronomical *rôle*. It seems that the rapid succession of things which constitute our time, and the changing series of phenomena which we experience, do not fall to his lot; continuance and endless duration are his characteristics; and he is free from counting for his individual personal life the successive ages which, on our globe, measure life and overwhelm it with their number.

The size of the sun exceeds the degree of our habitual measurements too much for us to hope to give a sufficient idea of it. In the matter of volumes, as in that of distances and times, the numbers too far surpass our ordinary conceptions to appeal to our minds, and every care that we take to represent them to ourselves remains almost sterile. Nevertheless, a comparison will be able to inspire at least a nearer idea of the size to which we refer.

If we placed the terrestrial globe in the centre of the solar globe, like a kernel in the middle of a fruit, the distance of the moon would be included in the interior of the solar body; the moon itself would be absorbed in it, and beyond the moon to the surface of the sun, following the same radius, we should still have to traverse a distance of 200,000 miles. From the earth to the sun are reckoned 91,000,000 miles. It is on account of this great distance that this immense body only appears to measure a foot in diameter; and this explains why the ancients, and Epicurus in particular, did not believe it larger than that measure.

How to Ascertain the Distance.

This distance equally explains why it does not appear to us larger than the moon, which is only 240,000 miles away. From this it may reasonably be asked, how this distance from the sun to the earth could possibly be determined. The method is too complicated for us to explain it here in detail; but an idea may be given of it without exceeding the limits of this chapter.

Between the sun and the earth there are two planets, Mercury and Venus: the latter has rendered the greatest service in the study of the distance, which separates us from the sun. As its orbit (the circumference which it describes round the central body) is nearly on the same plane as the earth's orbit, it

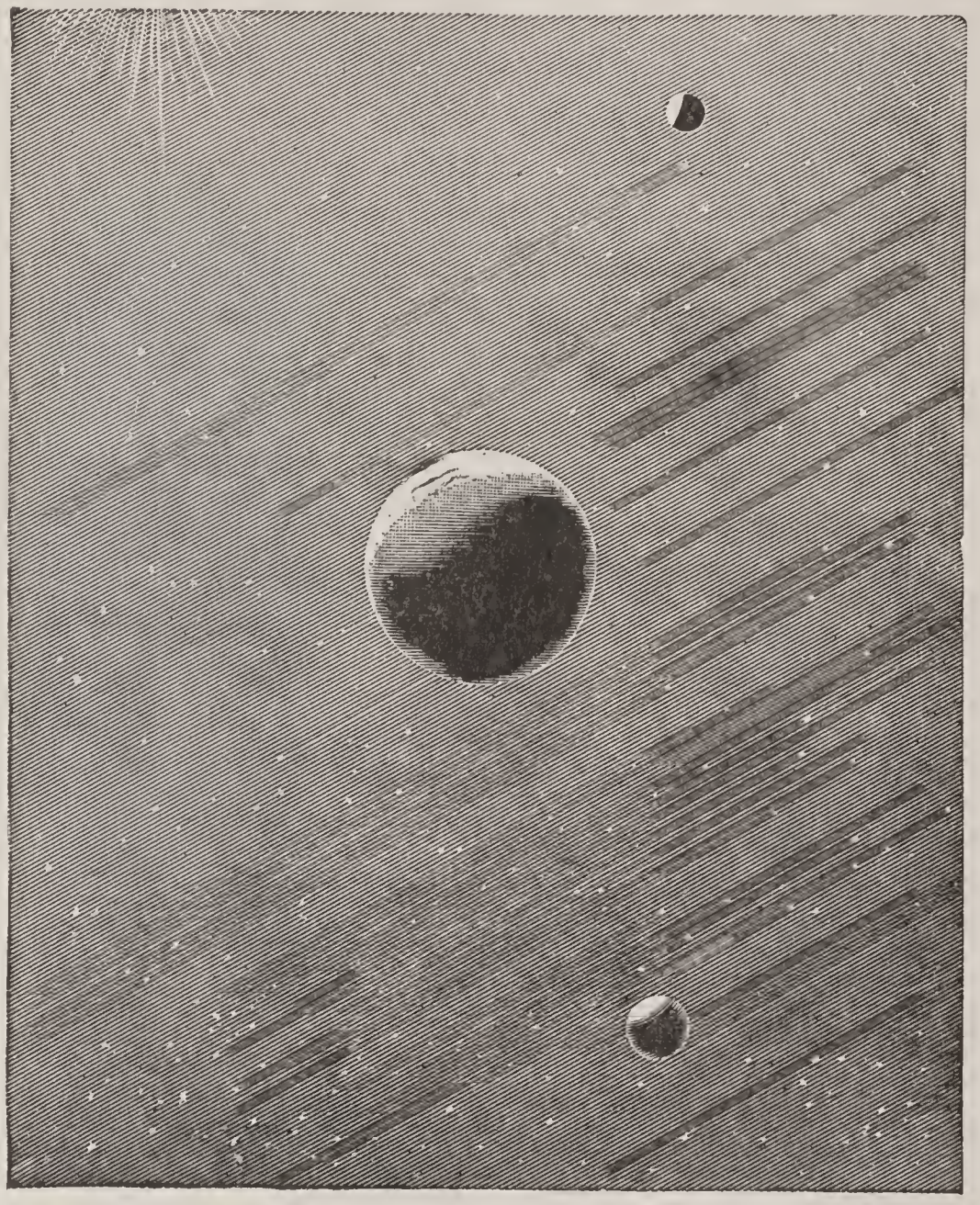
happens from time to time that it passes between the sun and ourselves, and appears like a black spot crossing the luminous disk. This passage takes place at the singular intervals of eight years, 113½ years—8 years, 113½ years + 8 years.

At these valuable periods, astronomers of all countries forget their nationality, and listening to each other like brothers, place themselves so as to observe the passage of Venus in different countries. Two observers situated in the stations most distant from each other, note the two points where the planet, seen from each of their stations, seems to be projected at the same moment on the solar disk. This measure gives them the angle formed by two lines starting from their stations, and crossing each other on Venus, and passing on to the sun. The measure of this angle, gives what is named the parallax of the sun.

Waiting Eight Years.

At the transit of Venus, in 1761, a French astronomer, Le Gentil—his name should have preserved him from such disappointments on the part of Venus—was curiously requited for his love of science and his disinterestedness. Sent to India by the Académie des Sciences, he embarked with arms and baggage to observe the passage of the planet at Pondicherry. His great activity and ardor could not conquer the chances of the sea voyage; he landed a few days after the phenomenon had taken place. The obstacles irritated him and increased his courage. He formed the heroic resolution of remaining for eight years in the midst of that unknown country, in order to compensate himself for his lost observation; he waited for the passage of 1769, and then made all desired arrangements to obtain a perfect observation.

The year and the day at length arrived! The sky was clear and no obstacle hindered his long resolution from at last receiving its reward. But, alas! exactly at the moment when the black spot was about to enter on the solar disk, a small cloud formed in the



THE EARTH FLOATING IN SPACE.

atmosphere and remained before the sun until the moment when Venus left the disk, putting an end to the possibility of all observation. The astronomer again took the voyage to France with a stormy sea, which brought his days to a close.

The last transit of Venus was in 1882, and there will not be another until June, 2004.

From considerations based on the magnetic action of the sun, we may be led to

believe that its light is of the same nature as the electric light, only incomparably more powerful, seeing that the elements which we have at command are infinitely inferior to those commanded by nature. However bright our electric foci may be, however dazzling their light, the whiteness of which astonishes us, when it is projected on the solar disk, the electric light has the appearance of a black spot.

Inconceivable Heat.

The intensity of solar heat is not less difficult to conceive; the most intense of our furnaces, which rise to the temperature of white heat, does not give us a faint idea of it. However, the following comparisons will indicate its value. If we represent the sun under the form of an enormous globe built up of a million four hundred thousand terrestrial globes, and covered entirely with a stratum of coal fourteen miles thick, the heat which it pours out annually in space is equal to that which would be furnished by this stratum of flaming coal. This solar heat would also be capable of melting in one second a column of ice which would measure 1590 square miles at its base, and 192,000 miles high.

It is curious to inquire how much this gigantic body weighs. When astronomers place the sun in one of the pans of the immense scales with which they determine the weight of the stars, it is necessary for them to put in the other one, 350,000 terrestrial globes like our own to restore equilibrium.

Many of the chemical effects of the sun's light are, and long have been, familiar. Linen and cotton cloth exposed to it, for a length of time, as is well known, will be bleached; and fabrics dyed of certain colors will be faded, or changed into a different shade. Yellow wax laid beneath the solar rays will be turned white; and the colorless horn silver in a few minutes changed into a violet tint. And so of many other substances.

If a piece of paper, or a finger, be dipped in lunar caustic, and then be exposed to the sun, it will quickly turn black. If initial letters or names be written on linen with what is called indelible ink, they will be at first quite pale, but by a short exposure to the sunlight they turn dark. If a sheet of paper be plunged into a solution of common salt, then dried, and again be dipped into a solution of silver, it becomes so sensitive to the action of the sunrays, that if ferns and leaves such as those represented in Fig. 1, be placed upon it, and then exposed to the summer's sun, the uncovered part of the paper will turn black, while that beneath the ferns and leaves will remain white, presenting an exact impress of the whole group, as in Fig. 2.

Pictures Made by the Sun.

Nothing can give a more beautiful picture of them; the light works through the slender leaves, but not through the thicker and more compact stems, and thus copies all, even to the minutest veins. This process has been turned to important practical purposes; it has been of great service, for example, in military operations, where it was necessary to make quickly a copy of some map of which there was only one impression. If a duplicate had to be made by hand, it would require several days to accomplish it; nor would it then have been as correct as that printed by the sun in the above manner.

It is by the chemical action of the sun, as is well known, that the photographer brings forth his marvelous productions—productions which are not only of pleasing personal interest, but of the greatest practical value in art, science, and literature. By the simple action of the sunrays upon certain

substances overspreading the surface of metallic or paper tablets, he can obtain an accurate likeness of any person, place, or thing he may desire. In this way he is enabled to preserve for us the lineaments of those who have benefited their race by their learning, their skill or their bravery.

By the agency of the very rays which illumine the countenance and reveal the brilliancy of the laughing eye and the charm of the roseate cheek, he can at once secure for us a lifelike picture of the form and features we most admire and love. In the same manner he can copy the outlines and details of natural scenery with perfect fidelity. In his picture will be found every undulation of the landscape, every projecting rock, every sinuous stream, each spreading tree, each grazing ox, the peasant's home, the village spire, together with every other object and feature in the scene—these, all these, he can faithfully transfer to his plate, in all their varied and delicate shades, by the agency of the sunbeams which illuminate the whole.

The chemistry of the solar rays, in our day, has become a most important auxiliary to nearly every branch of human study or investigation. By its means the traveler is enabled to bring home accurate representations of the scenery, inhabitants, and productions he has witnessed in foreign climes; the geologist, to secure unerring delineations of the marvellous fossils of the flora and fauna he has discovered in the deep strata of the earth; the astronomer, to present the transient appearances of the eclipses he has observed in the heavens; the meteorologist, to furnish a correct registry of his barometer and thermometer every hour.



Fig. 1.



Fig. 2.

WREATHS COPIED BY THE SUN.

By its aid the antiquarian is able to obtain a fac-simile of the ruined temples, broken statuary, and obscured inscriptions which he has found on the fields of ancient civilization and power; the botanist, to copy with nature's exactness the forms and parts of plants, the stamens, and corolla, and pistils, and pollen of flowers; and the anatomist, to exhibit the various organs and functions of the body, both in their normal and abnormal conditions.

As nothing is more general in its application, so nothing is more perfect and ad-

mirable in its execution, than the sunbeam. No object is too great, and none too minute for it to depict. It can give us large pictures, with every detail perfect and in its right proportion, of the minutest objects, such as insects and animalcula; and it can furnish us with microscopic pictures, equally correct, of objects huge or vast. This is achieved by the intervention of lenses that magnify or diminish the image.

Microscopic photography is of great importance in relation to anatomic preparations, which quickly change and become decomposed; it is also of very essential help in the study of fixed and permanent bodies. Jewelry, and even toys are sometimes made, containing minute photographs beneath small magnifying glasses. When these are held before the eye, small transparent images, some of them portraits, some statues, and others, writings, come into view in admirable perfection. Such things, however, serve rather for amusement than use.

Microscopic Photography.

But there are cases where microscopic photography may prove of no little value and importance. It has been suggested that in this way the contents of ponderous volumes might be concentrated within a few square inches, and the books of a whole library be reduced within the capacity of a single drawer. Though nothing of this sort, as far as the author is aware, has thus far been done, yet the process has been employed for other ends under most interesting circumstances.

Professor Hermann Vogel relates that during the seige of Paris, in 1870, the blockaded city held communication with the world outside by means of balloons and carrier pigeons. The first mode of communication was almost engrossed for political objects; the second only admitted the transmission of very minute writing. Letters, however condensed, could scarcely have been sent more than two or three at a time by a pigeon. In this case, microscopic photography presented a valuable means of concentrating many pages on a collodion film of only one square inch, and of expediting more than a dozen of such almost imponderable films packed in one quill.

What the Sunbeam Can Do.

Dagrand, at Paris, who first prepared microscopic photographs, also set going the system of these pigeon dispatches. All the correspondence which had to be diminished was first set up in type, and printed together on a folio page. A microscopic photograph was made of this folio page, contained in about the space of 1½ square inches. This collodion film, with the image upon it, was then glazed over by pouring leather collodion over it; that is, collodion containing a solution of glycerine. This glucose collodion easily dries, separates from the picture, and forms a transparent film; a membrane of this kind could contain as many as fifteen hundred despatches.

At the place of arrival these membranes were unrolled, and then enlarged by the help of a magic lantern; a number of writers thereupon set to work to copy the enlarged despatches, and ultimately forwarded them to their respective addresses. Thus Paris corresponded, by the aid of photography, for six months with the world without, and even poor persons were able to let their relatives know that they still lived.

Another marvelous fact pertaining to the chemistry of the solar ray is, the rapidity with which it produces its effects upon certain substances. A new negative process has lately been discovered; it consists in the

use of a gelatine emulsion of silver bromide for the sensitive surface. With a plate thus prepared, a photograph may now be taken in one second of time which it formerly took thirty seconds to secure; and a plate can be prepared which needs an exposure of only one-sixtieth of a second, when a view is fairly lighted, to secure a soft and harmonious negative.

Thus it appears that the solar rays are capable of instantaneous chemical action, and of producing for us a perfect picture of a man in full activity, or of an object in rapid motion. The likeness of an orator may be taken at the moment of his highest pitch of eloquence, giving not only his attitude and gesticulation, but the very expression of his features. A squadron of cavalry can be pictured as they advance with rushing speed to the deadly charge, each man, each horse appearing a distinct figure in the scene.

Nay, a view has been taken in which the shadow and reflections of a swallow passing in the air over a pond were perfectly represented. How wonderful the workings of the laws of nature! how closely related all its parts! how admirably constituted every ray of the sun to move every atom to accomplish the purposes of Him who worketh all in all.

Eclipse of the Sun.

The total eclipse occurs when the moon is near to the earth, and when her distance from us is such that her apparent diameter is sufficient to cover the entire disk of the sun. This is an event of great interest to the astronomer, both on account of its short duration and rare occurrence.

The longest time an eclipse of the sun can be total is seven minutes; but often it does not exceed three or four minutes.

And it takes place at any one locality only at distant intervals; for instance, at London, prior to the total eclipse of 1715, no such phenomenon had been visible for a period of 575 years.

Among all the evolutions of the creation, visible to us, no occurrence is more striking or impressive than this. "A total eclipse of the sun," says Lockyer, "is at once one of the grandest and most awe-inspiring sights it is possible for man to witness. As the eclipse advances, but before the disk is wholly obscured, the sky grows of a dusky livid, or purple, or



THE SUN ECLIPSED.

yellow crimson color, which gradually gets darker and darker, and the color appears to run over large portions of the sky, irrespective of the clouds. The sea turns lurid red. This singular coloring and darkening of the landscape is quite unlike the approach of night, and gives rise to strange feelings of sadness.

"The moon's shadow sweeps across the surface of the earth, and is even seen in the air; the rapidity of its motion and its intenseness produce a feeling that something material is rushing over the earth at a speed perfectly frightful. All sense of distance is lost; the faces of men assume a livid hue,

flowers close, fowls hasten to roost, cocks crow, birds flutter to the ground in fright, dogs whine, sheep collect together as if apprehending danger, horses and oxen lie down, obstinately resisting the whip and the goad; in a word, the whole animal world seems frightened out of its usual propriety and all things wear the garb of terror."

The Brilliant Corona

CELESTIAL phenomena, also, attend a total eclipse, still more grand and imposing. A few seconds before the commencement of the total obscuration, the stars burst out, and surrounding the dark moon on all sides is seen a glorious halo, commonly of a silvery white light, which is called the corona. This radiates and extends beyond the moon, to a distance equal to her apparent diameter, and in some eclipses is observed to reach to a much greater distance.

This luminous appendage is supposed to be the sun's atmosphere, which is not seen when the sun itself is visible, owing to its overpowering splendor. General Myer gives the following description of the corona, as observed by him from the summit of White Top Mountain, Virginia, 5530 feet above the level of the sea, this elevated station being chosen in order to escape the smoke and haze which generally prevail in lower regions:

"The eclipse presented, during the total obscurations, a vision magnificent beyond description. As a centre stood the full and intensely black disk of the moon, surrounded by the aureola of a soft, bright light, through which shot out, as if from the circumference of the moon, straight, massive, silvery rays, seeming distinct and separate from each other, to a distance of two or three diameters of the lunar disk, the whole spectacle showing as upon a background of diffused rose-colored light.

A Gorgeous Spectacle.

"This light was most intense, and extended farthest, at about the centre of the lower limb, the position of the southern prominence. The silvery rays were longest and most prominent at four points of the circumference, two upon the upper and two upon the lower portion, apparently equidistant from each other, giving the spectacle a quadrilateral shape."

Great changes in the solar prominences, as a rule, take place only very slowly, or quite imperceptibly. In some cases, however, the change in the form of a prominence is so extraordinary, and occurs with such rapidity, that it can only be ascribed to extremely violent agitations in the upper portions of the solar atmosphere, compared with which the cyclonic storms occasionally agitating the

earth's atmosphere, sink into insignificance.

Professor Respighi is of the opinion that the solar prominences are of an eruptive origin and of a gaseous nature, and that electric action in some form is concerned in producing these eruptions. He observed some prominences that exceeded three minutes, or ten times the earth's diameter, in height; and one prominence that was not less than twenty times the earth's diameter, or 160,000 miles in altitude. He also noticed that the formation of a prominence is usually preceded by the appearance of a rectilinear jet, either vertical or oblique, and very bright and well defined.

Wonderful Eruptions.

This jet rising to a great height, is seen to bend back again, falling toward the sun like the jets of our fountains, and presently the sinking matter is observed to assume the shape of gigantic trees, more or less rich in branches and foliage. Gradually the whole sinks down upon the sun, sometimes forming isolated clouds before reaching the solar surface. It is in the upper portions of such prominences that the most remarkable and rapid transformations are witnessed; but a great difference is observed in the rate with which prominences change in figure.

Their duration, too, is very variable. Some develop and disappear in a few minutes, while others remain visible for several days. He considers that the sharply defined bases of the eruptive jets prove that the eruption takes place through some compact substance, forming a species of solar crust. He also holds that the enormous velocity with which these gaseous masses rush through the solar atmosphere implies that the latter is of exceeding tenuity.

Professor Young, of Dartmouth College, by means of an instrument called "telespectroscope," witnessed the most remarkable outburst from the sun ever yet seen by man. "On the 7th of September, 1871, between 12.30 and 2 P. M.," he says, "there occurred an outburst of solar energy remarkable for its sudden violence. Just at noon I had been examining with the telespectroscope an enormous protuberance of hydrogen close on the eastern limb of the sun. It had remained with very little change since the preceding noon—a long, low, quiet-looking cloud, not very dense or brilliant, nor in any way remarkable except for its size.

"It was made up mostly of filaments



REMARKABLE CORONA.

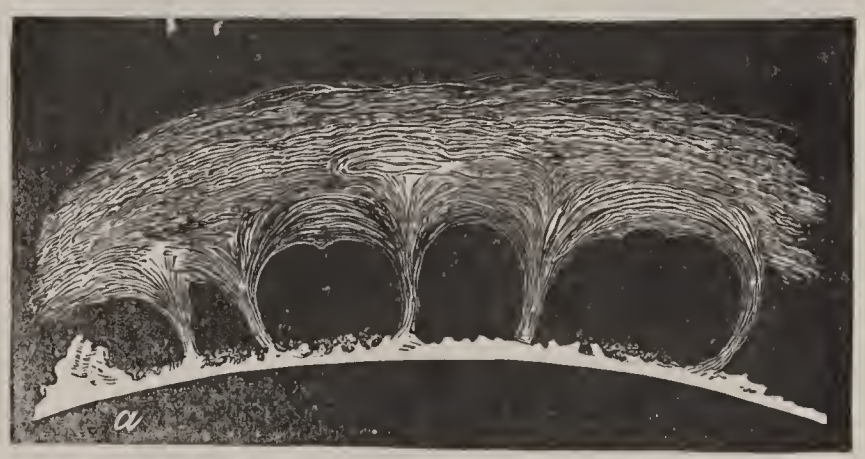
nearly horizontal, and floated above the chromatosphere with its lower surface at a height of some 15,000 miles, but was connected with it, as is usually the case, by three or four vertical columns brighter and more active than the rest. Lockyer compares such masses to a banyan grove. It was about 100,000 miles long by 54,000 high.

"At 12.30, when I was called away for a few minutes, there was no indication of what was about to happen, except that one of the connecting stems at the southern extremity of the cloud had grown considerably brighter, and was curiously bent to one side; and

near the base of another at the northern end a little brilliant lump had developed itself, shaped much like a summer thunder-head. The annexed figure represents the prominence at this time, *a* being the thunder-head.

"What was my surprise, then, on returning in less than half an hour, to find that in the meantime the whole thing had been literally blown to shreds by some inconceivable up-rush from beneath. In place of the quiet cloud I had left, the air, if I may use the expression, was filled with flying *débris*—a mass of detached vertical fusiform filaments, brighter and closer together where the pillars had formerly stood, and rapidly ascending.

"When I first looked, some of them had



BANYAN GROVE ON THE SUN.

already reached a height of nearly 100,000 miles, and while I watched them they rose with a motion almost perceptible to the eye, until in ten minutes the uppermost were more than 200,000 miles above the solar surface. This was ascertained by careful measurement. The velocity of ascent also, 166 miles per second, is considerably greater than anything hitherto recorded.

"A general idea of its appearance when the filaments attained their greatest elevation may be obtained from the accompanying cut (Fig. 1). As the filaments rose they gradually faded away like a dissolving cloud, and at 1.15 only a few filmy wisps, with some brighter streamers low down near the chromatosphere, remained to mark the place.

"But in the meanwhile the little thunder-head, before alluded to, had grown and developed wonderfully into a mass of rolling and everchanging flame, to speak according to appearance. First it was crowded down, as it were, along the solar surface (Fig. 3, *a*); later it rose almost pyramidally 50,000 miles in height; then its summit was drawn out into long filaments and threads which were most curiously rolled backwards and downwards, like the volutes of an Ionic capital (Fig. 2); and finally it faded away, and by 2.30 had vanished like the other. The accompanying cuts show it in its full development; the former having been sketched at 1.40, and the latter at 1.55.

Grand Burst of Flame.

The whole phenomenon suggested most forcibly the idea of an explosion under the great prominence, acting mainly upwards, but also in all directions outwards, and then, after an interval, followed by a corresponding in-rush. The same afternoon a portion of the chromatosphere on the western limb of the sun was for several hours in a state of unusual brilliancy and excitement.

Such are some of the marvelous phenomena made known to us by astronomical science. We can say with Byron in his brilliant apostrophe:

Glorious orb! the idol
Of early nature and the vigorous race
Of undiseased mankind, the giants' sons
Of the embrace of angels with a sex
More beautiful than they which did draw down
The erring spirits who can ne'er return,—
Most glorious orb! that wert a worship ere
The mystery of thy making was revealed!
Thou earliest minister of the Almighty,
Which gladdened, on their mountain-tops, the hearts
Of the Chaldean shepherds till they poured
Themselves in orisons? Thou material God!
And representative of the Unknown—
Who chose thee for His shadow! Thou chief star,
Centre of many stars! which make'st our earth

Endurable, and temperest the hues
And hearts of all who walk within thy rays!
Sire of the seasons! Monarch of the climes,
And those who dwell in them! for near or far,
Our inborn spirits have a tint of thee,
Even as our outward aspects: thou dost rise,
And shine, and set in glory.

The formation of visible vapors, and their aggregation in masses, take place generally in high regions of the atmosphere under the action of currents, in consequence of a decrease of temperature and a due supply of aqueous elastic vapor being present in those parts where clouds arise. It is easy to perceive that these two conditions, necessary to the production of cloud-land, may be fulfilled in one stratum of the atmosphere and not in another; and hence the frequent diversity in the appearance of the sky, the clear blue fields and patches of ether alternating with visible vaporous structures.

The clouds are supposed to consist of minute globules of water filled with air; but there is great difficulty, even with the aid of this view of their structure, in explaining their suspension aloft, for the globules must be specifically heavier than the air by which they are upborne. The theory of ascending currents of heated air has been proposed by Lussac to account for their position; and the retention of solar heat in the clouds themselves, buoying them up and causing them to float, by Fresnel.

The clouds float at different elevations, but the higher we ascend the drier the atmosphere is found, and the less loaded with vapors. We shall not err much, says Leslie, if we estimate the position of extreme humidity at the height of two miles at the pole, and four miles and a half under the equator, or a mile and a half beyond the limit of congelation. Dalton asserts that small, fleecy patches of cloud are frequently from three to five miles in height, and such have been observed sailing above the most elevated peaks of the Andes, which rise twenty-five thousand feet above the level of the sea; but other authorities claim for some visible clouds a still greater elevation. The height varies at different seasons of the

Fig. 1.

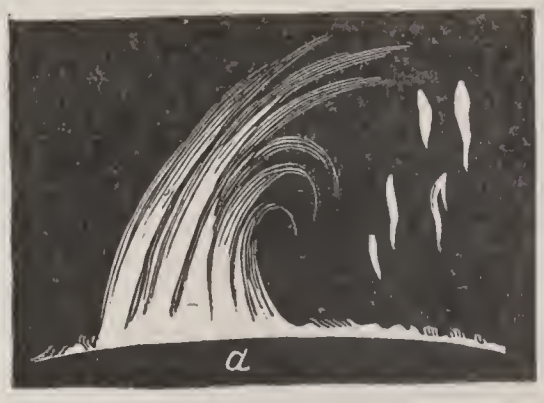


Fig. 2.



Fig. 3.



EXPLOSIVE PHENOMENA IN THE SUN.

year, and there is little doubt that it is much more frequently below than above a mile.



STRIKING APPEARANCES OF CLOUD-LAND.

The effect is striking when, from an eminence which commands a view of an extensive plain or valley, we see the gossamer curtain of the night resting upon the surface, gradually rent and torn by the action of the sun's rays, reflecting their golden hue as it disappears. Many of the most felicitous images of poetry are derived from this source, as in Ossian: "The soul of Nathos was sad, like the sun in a day of mist, when his face looks watery and dim;" and again, when two contending factions are silenced by Cathmor: "They sunk from the king on either side, like two columns of morning mist, when the sun rises between them on the glittering rocks."

The stratus is occasionally seen under peculiar and striking circumstances, extending over the surface of a sheet of water, without passing the boundary of its banks. Thus a lake or river will exhibit a white cloud of visible vapor resting upon it, from which the adjacent land is perfectly free. Sir Humphry Davy thus explains this curious phenomenon:

"All persons who have been accustomed to the observation of nature must have frequently witnessed the formation of mists over the beds of rivers and lakes in calm and clear weather after sunset; and whoever has considered these phenomena in relation to the radiation and communication of heat and the nature of vapor, can hardly have failed to discover the true cause of them.

Phenomena of Heat.

"As soon as the sun has disappeared from any part of the globe, the surface begins to lose heat by radiation, and in greater proportions as the sky is clear; but the land and the water are cooled by this operation in a very different manner; the impression of cooling on the land is limited to the surface, and very slowly transmitted to the interior; whereas in water above forty degrees Fahrenheit, as soon as the upper stratum is cooled, whether by radiation or evaporation, it sinks in the mass of fluid, and its place is supplied by water from below; and till the temperature of the whole mass is reduced to nearly forty degrees Fahrenheit, the surface cannot be the coolest part.

"It follows, therefore, that wherever water exists in considerable mass, and has a temperature nearly equal to that of the land, or only a few degrees below it, and above forty degrees Fahrenheit at sunset, its surface during the night, in calm and clear weather, will be warmer than that of the contiguous land; and the air above the land will necessarily be colder than that above the water; and when they both contain their due proportion of aqueous vapor, and the situation of the ground is such as to permit the cold air from the land to mix with the warmer air above the water, mist or fog will be the result."

The atmosphere of our globe is composed mainly of two gases, oxygen and hydrogen, whose combination forms a perfectly transparent medium. In this medium, however, there floats at all times a vast quantity of aqueous vapor, raised daily by the heat of the sun, in the form of steam, from the surface of the sea and of the dry land. The amount of water thus lifted into the air by the process of evaporation is very great, and far exceeds that discharged into the ocean, during the same length of time, by all the rivers of the earth.

How the Sun is Colored.

The aqueous vapor produced in this manner is diffused through the whole body of the atmosphere, and is in a state of perpetual motion and change, being rarefied into an invisible condition, or condensed into mists and clouds, according to the varying degrees of heat or cold to which it is exposed; and in this way it affects, sometimes more and sometimes less, the general transparency of the air, and modifies both the colors and the forms of objects seen through it. And in the present chapter we are to speak of the various aspects which it gives to the solar orb.

The sun, viewed through a vaporous atmosphere, appears in "false colors." When the vapor is dry and rarefied, or in an invisible condition, the air is clear, and the sun is seen in its natural brightness. But if the vapor be slightly condensed, and takes the form of mist, he appears through it as if shorn of his glories, a white orb, upon which the eye can rest without pain or inconvenience; as he descends he grows still more dull; and finally, as he approaches the horizon, he gradually assumes a rosy tint, and at last a deep red color.

These changes are thus explained. Every ray of the sunlight which comes to us has to

pass through the whole thickness of the atmosphere, and the greater the distance it has to travel the greater the portion of it that is absorbed by the vapors in the air. And this distance, as is obvious, increases with the increased declination of the sun.

If we admit the atmosphere to extend vertically to the height of sixty-two miles, a ray of light coming from the sun at the zenith has only these sixty-two miles to pass through in order to reach us. But a ray from the sun on the horizon has to travel through seven hundred and six miles, or more than eleven times the former distance, and that, too, through the densest portion of the atmosphere. In traversing this great distance, the various colors combined in the perfectly white ray, except the red, are, for the most part, absorbed by the slowly condensing vapors along the cooling surface of the earth. Hence the red color in which the sun appears at its setting and rising.

The Sun's Apparent Form.

The sun, viewed through a vaporous atmosphere, often appears, also, in a "false form." Seen on the meridian, through a clear sky, he appears as a perfect circle, which is his true outline. But as seen near the horizon, in certain conditions of the atmosphere, instead of being circular, he appears of an oval form, the upper and lower sides being flattened, and the latter more so than the former. On high mountains, and on plateaux near the seacoast, this flattening of the disk appears very considerable, amounting sometimes to one-fifth the apparent diameter of the sun. This peculiar deformation is caused by the refraction or bending of the rays of light in passing through the vapors of the atmosphere. Sometimes the want of homogeneity in the successive layers of the atmosphere, caused by the unequal admixture of vapors, gives to the sun an apparent form of so irregular a character that he is scarcely recognizable.

Again, the sun, viewed through the atmospheric vapors, in a certain state, appears surrounded by appendages which do not belong to him. When the sky is hazy, and presents a dull, milky appearance, there is frequently to be seen around the sun a colored circle, or halo, and the sun occupying the centre of the circle, as *h h*. The inner edge of the circle is colored red, and is well defined. The sky within the halo is much darker than it is for some distance without.

Magnificent Halos.

Sometimes there may be seen around the sun a second halo or colored circle, as H H. The inner edge of this also is red, and tolerably well defined, while the outer edge is of a pale blue color, and but faintly marked. At rare intervals, a third halo, radius, as H′ H′, has been observed, surrounding the sun. Unlike the other two halos, this one shows scarcely a trace of color.

All these phenomena are produced by the refraction of the sunlight in passing through the minute crystals of frozen vapors floating in the atmosphere; these crystals being of various kinds and having their facets set at different inclinations to one another, refract the various colors of the sunrays at different angles, and thus produce halos of different diameters.

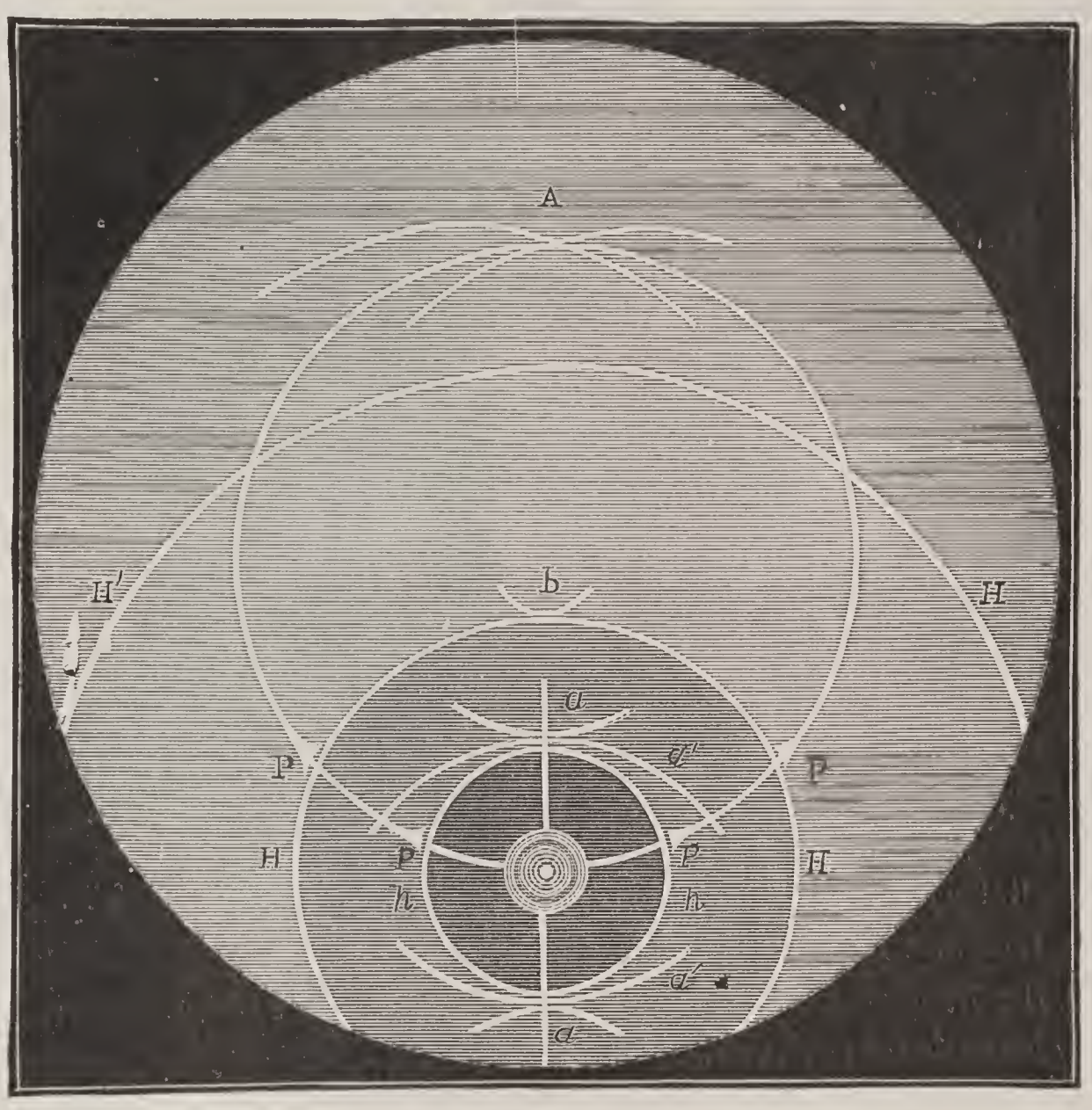
When a halo is formed around the sun, there is often to be seen a white circle passing through the sun, and parallel to the horizon, as represented by A P P. This is called parhelic circle, and is produced like the foregoing by the reflection of the sun's light from ice prisms or snow crystals, whose surfaces have a vertical position. At or near those points where halos cut the parhelic

circle, there is a double cause of light; and here the illumination is sometimes so great as to present the appearance of a mock-sun, and is called parhelion.

The number of these mock-suns, or parhelia, visible at the same time, is variable; sometimes one or two only are to be seen, at other times four or five; on some occasions as many as seven have been observed at once. The mock-suns generally seem about the size of the true sun, but not quite so bright, though occasionally they are said to rival their parent luminary in splendor. These beautiful phenomena appear most commonly in high latitudes, but often occur in the more temperate regions.

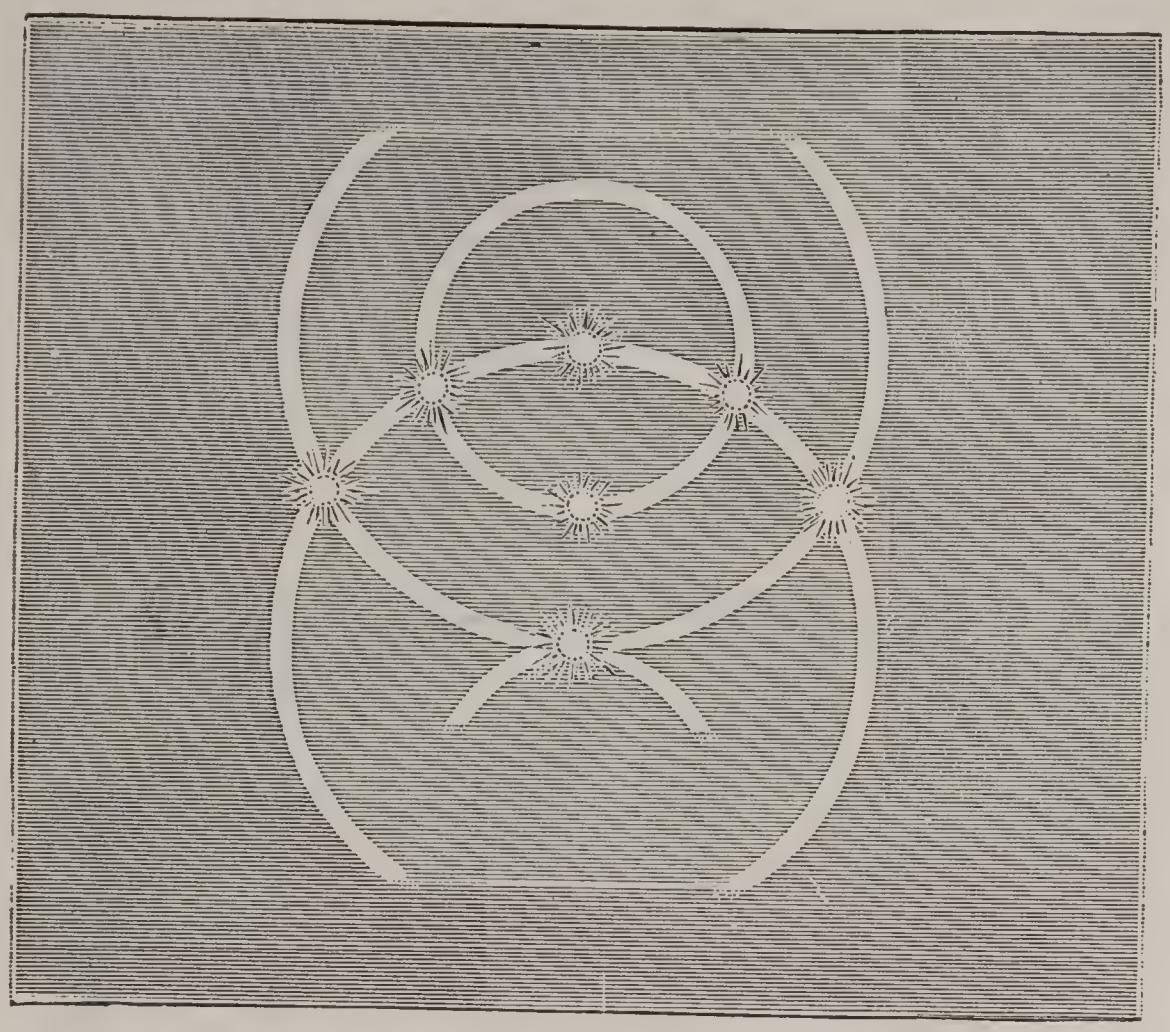
Parhelia have been observed frequently both in ancient and modern times. Aristotle records two appearances of these meteors, and Pliny mentions their occurrence at Rome. A double parhelion, which was noticed before the Christian era, is referred to by St. Augustine. Many others have been observed from different points on the continent. On the 2d of January, 1586, Christopher Rotham saw, at Cassel, before sunrise, an upright column of light of the breadth of the sun's disk. As the sun rose, he was preceded and followed by a parhelion, which appeared in contact with his orb, and continued visible for thirty minutes and then were hidden by a cloud. On the 28th of February, 1551, mock-suns were seen at Antwerp; and on the 17th of March of the same year, a similar phenomenon, with two halos, was witnessed at the same place. Four days after the last named, two parhelia, with three halos, were seen at Magdeberg.

Scheiner witnessed a singular one at Rome, on the 20th of March, 1629. From the zenith as a centre there was seen a great white circle, having the true sun in its circumference; this was intersected by two concentric circles around his disk. Where the outer of these smaller rings cut the zenithal circle, two parhelia appeared, and in the great circle, nearly opposite to these, but separated by a wider arc, two others were visible.



HALOS AND PARHELIA.

Gassendi describes a very remarkable instance of this phenomenon, which was seen in 1630. Around the sun were two concentric

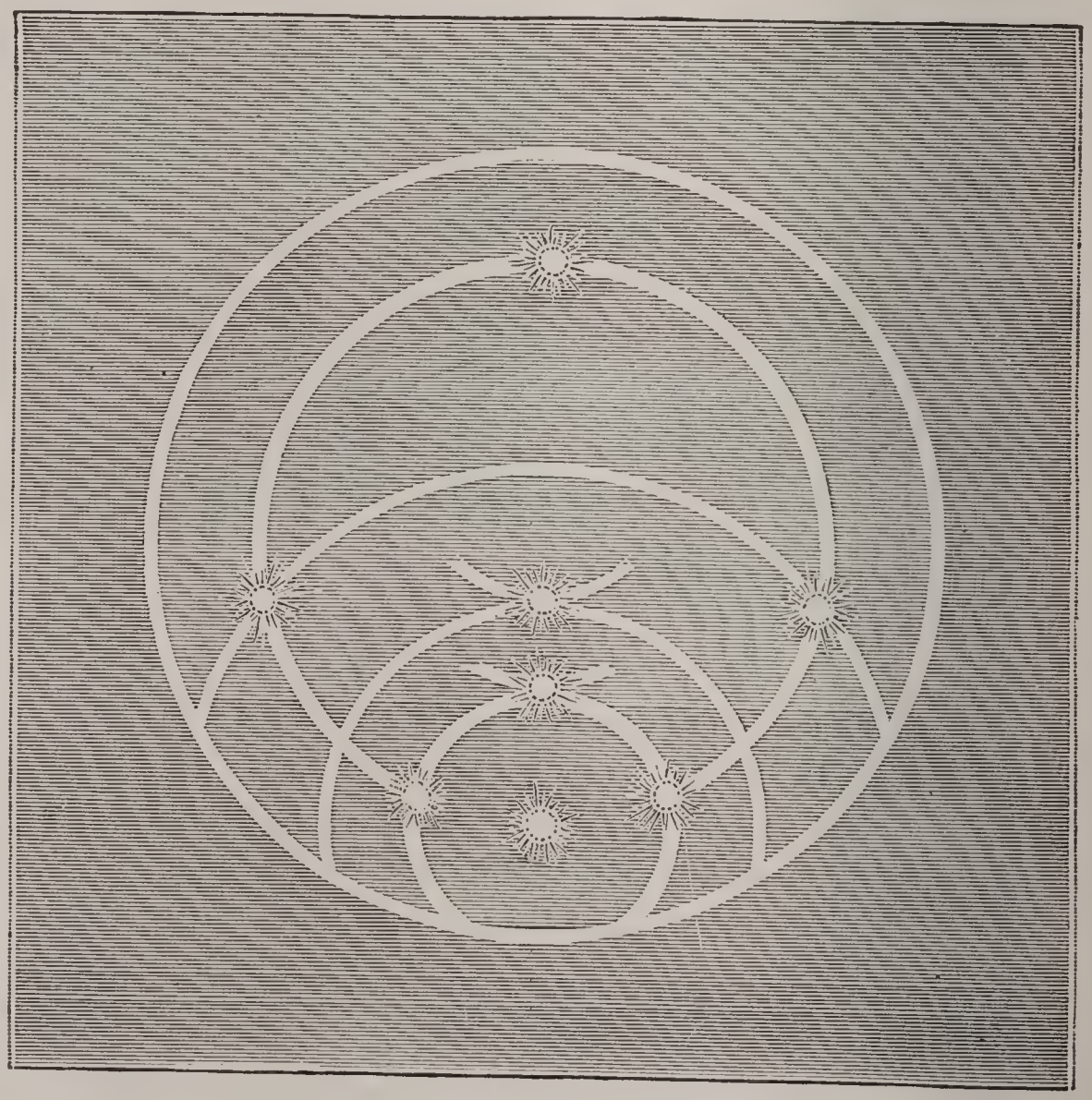


PARHELIA OBSERVED BY GASSENDI.

halos; the larger cut the horizon, and consequently was incomplete; these were colored like the rainbow, excepting that the red was internal. In the direction of the zenith, there was a tangental arc external to these halos; and with the zenith as a centre, a great white circle ran parallel with the horizon, having the true sun in its circumference. At the five intersections of these circles and arcs parhelia appeared, and a sixth was seen in the internal halo between the true sun and the zenith.

One of the finest meteors of this kind on record was seen by Hevelius, at Sedan, on the 20th of February, 1661. "A little before 11 o'clock," he says "the sun being towards the south and the sky very clear, there appeared seven suns together, in several circles, some white and others colored, and these with very long tails waving and pointing from the true sun, together with certain white arches crossing one another. The true sun was about 25° high, and surrounded almost entirely by a circle whose diameter was 45°, and colored like a rainbow with purple, red and yellow, its under limb being scarcely 2½° above the horizon.

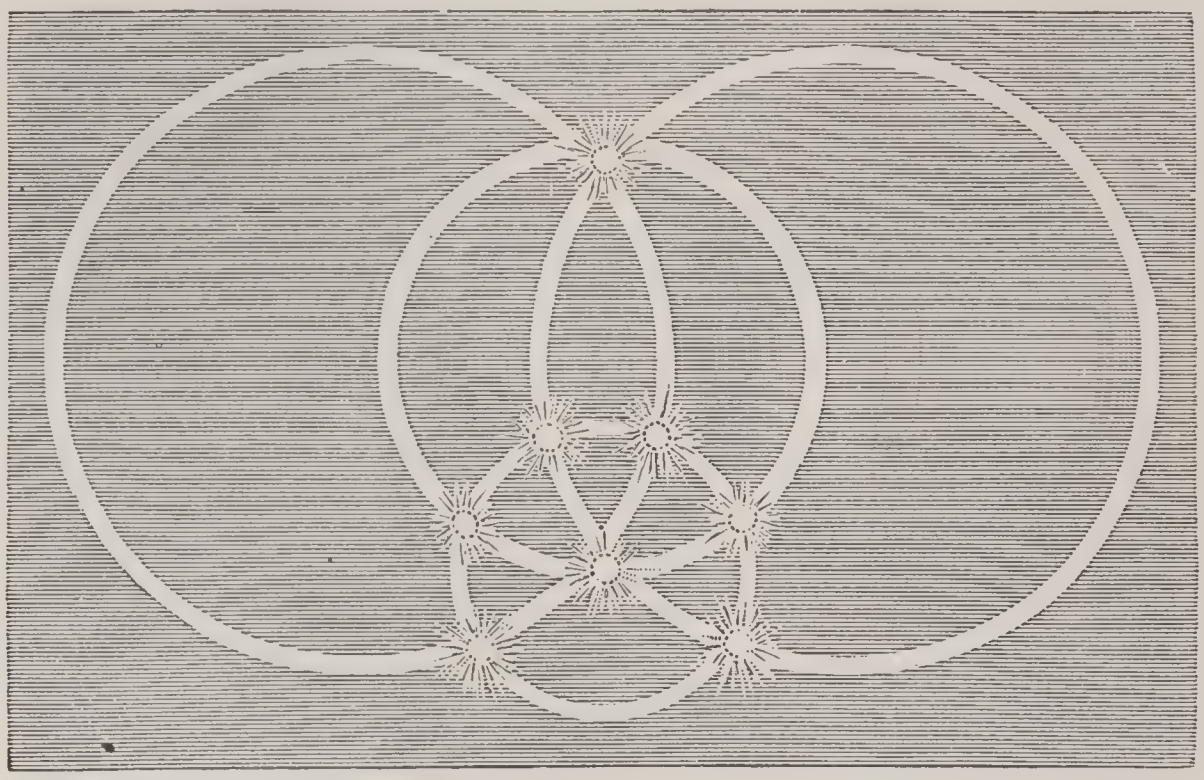
On each side of the sun, towards the west and east, there appeared two mock-suns, colored, especially towards the sun, with very long and splendid tails of a whitish color, terminating in a point. A far greater circle encompassed the sun and the former lesser circle, and extended itself down in the horizon. It was very strongly colored



PARHELIA OBSERVED BY HEVELIUS.

to its upper part, but was somewhat duller and fainter on each side. At the tops of these two circles were two inverted arcs, whose common centre lay in the zenith, and these were very bright and beautifully colored.

In the middle of the lower arc, where it coincided with the circle, there appeared another mock-sun, but its light and colors were dull and faintish. There appeared a circle much bigger than the former, of a uniform and whitish color, parallel to the horizon, which arose, as it were, from the collateral mock-suns, and passed through three other parhelia, of a uniform whitish color like silver. There passed also two other white arches of the greatest circle of the sphere through the eastern and western parhelia, and also through the pole of the ecliptic. They went down to the horizon, crossing the great white circle and obliquely, so as to make a white cross at each parhelion; so that seven suns appeared very plainly at the same time. This phenomenon, with certain changes in the brightness of its several parts, continued visible for an hour and twenty minutes."



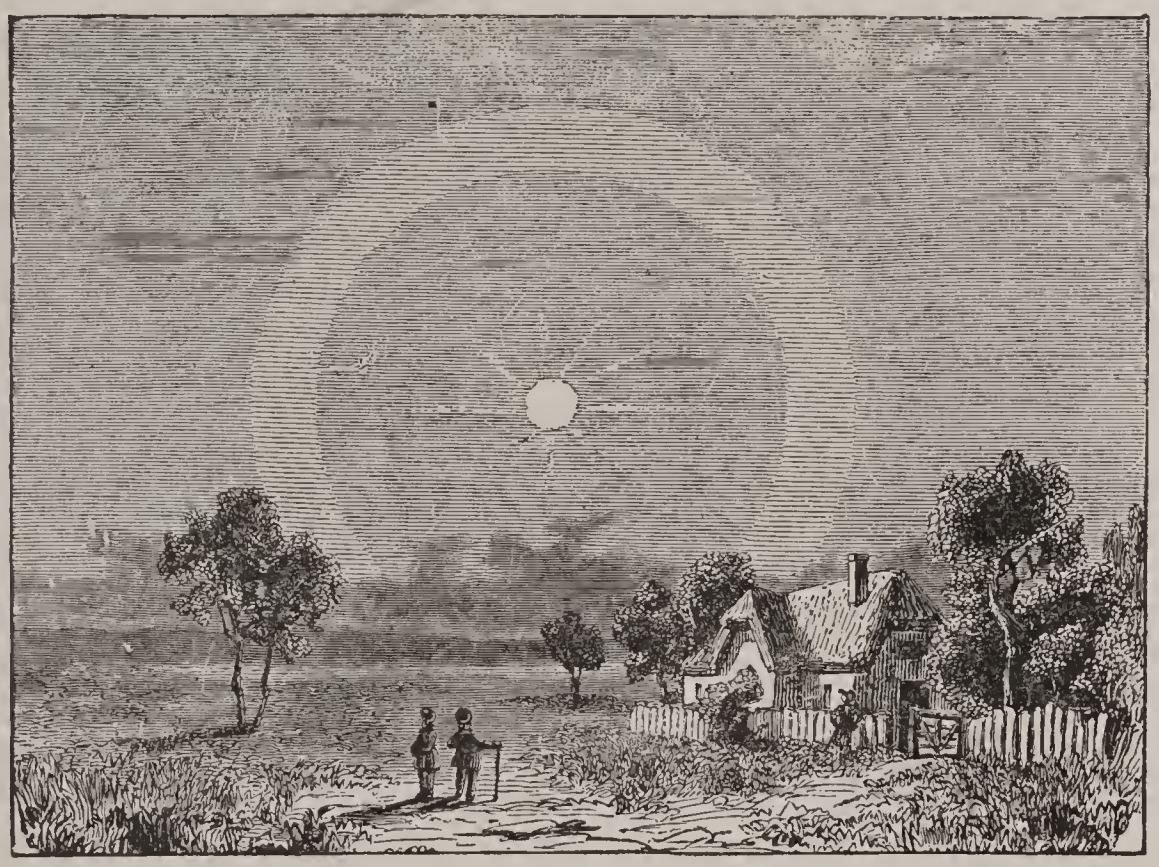
PARHELIA OBSERVED IN TENNESSEE.

Such parhelia have been observed at various times and places in North America. Barker describes a curious halo with accompanying mock-suns, which he saw at Fort Gloucester, near Lake Superior. A circle with tangental arc surrounded the sun; about midway between the horizon and zenith, a circle ran parallel to the horizon, having the sun in its circumference; in this horizontal circle there appeared altogether five mock-suns, with this peculiarity, that, directly opposite the true sun in this great circle, a St. Andrew's cross was seen, the upper limbs of which extended higher above, than the lower one descended below, this circle; in the intersection of this cross and the circle, one of the parhelia was placed. A very curious system of circles, with several mock-suns, appeared on the 19th of August, 1825, at Jackson, Tennessee.

An exceedingly curious optical appearance belonging to this class of phenomena, was observed by Mr. Fallows, at the Cape of Good Hope, when the sun's disk was just dipping in the ocean. On either side of the true luminary, and within the breadth of a degree and a half of his disk, four mock-suns appeared on the left, and three on the right. They had the same shape as the true sun, touched the water at the same instant, and all of them disappeared together, shining as bright spots upon the water's edge. This magnificent scene occurred on a delightful evening, when not a cloud was to be seen.

Such are a few of the marvelous appendages which the vapors of the atmosphere sometimes create around the great luminary of the day.

Now, evanescent as is the nature of all these meteoric phenomena at which we have glanced, and irregular as their occurrence may be, yet they are in no sense to be regarded as the result of chance. On the contrary, we see in them the play of exact and beautiful laws. All are produced according to the principles of order established in the beginning, by the One Supreme Lawgiver. In all, brightness and shade prevail in their ordained degrees; and heat and cold produce their designed effects in sea and land and sky. The sunrays in their passage through



BRIGHT HALO IN NORWAY.

visible mists, or viewless vapors, are reflected, refracted, and absorbed, according to uniform rules.

The diameters, distances and intersections of the encircling halos are all measured off after the undeviating principles of geometry. Every tint and shade in their coloring, and every facet and angle in the frozen particles that produce them, display the operations of the unerring laws of optics. Invisible vapors, icy crystals, luminous arches, colored halos, splendid parhelia—all proclaim the observance of law and order. And though the whole magnificent diorama may fade and vanish within the brief space of five minutes, yet, in its production, nothing has been slighted, nothing imperfectly formed, nothing left to be determined by chance.

If a pebble be dropped into the bosom of a still and smooth sheet of water, a circular depression is formed, at the point where it sank, which spreads wider and wider, with uniform velocity. In the meanwhile an elevation has been formed at the point where the pebble, in entering the water, had originally caused a depression; then as this sinks back to its original level it produces a wall-like circular elevation around it, which follows up the preceding circular depression with equal velocity. Whilst the water continues its up-and-down movement at the point struck, fresh wave-rings appear to proceed from this central point, which, owing to their constantly spreading more and more widely, give the illusory appearance of the fluid steaming out on all sides from the middle point.

Now, let us suppose that, instead of one pebble, two are dropped into the water at the same instant, but at a short distance one from the other. We shall have then two systems of circular waves moving and spreading out as before. As these two systems intersect each other, they divide the surface of the water into a regular net-work of small elevations and depressions, as represented in the annexed figure. Yet the one does not destroy or efface the other; at the points where two wave-crests meet, the surface of the water, if the two waves are equal, rises to twice the height, and where two depressions meet, it sinks to double the depth.

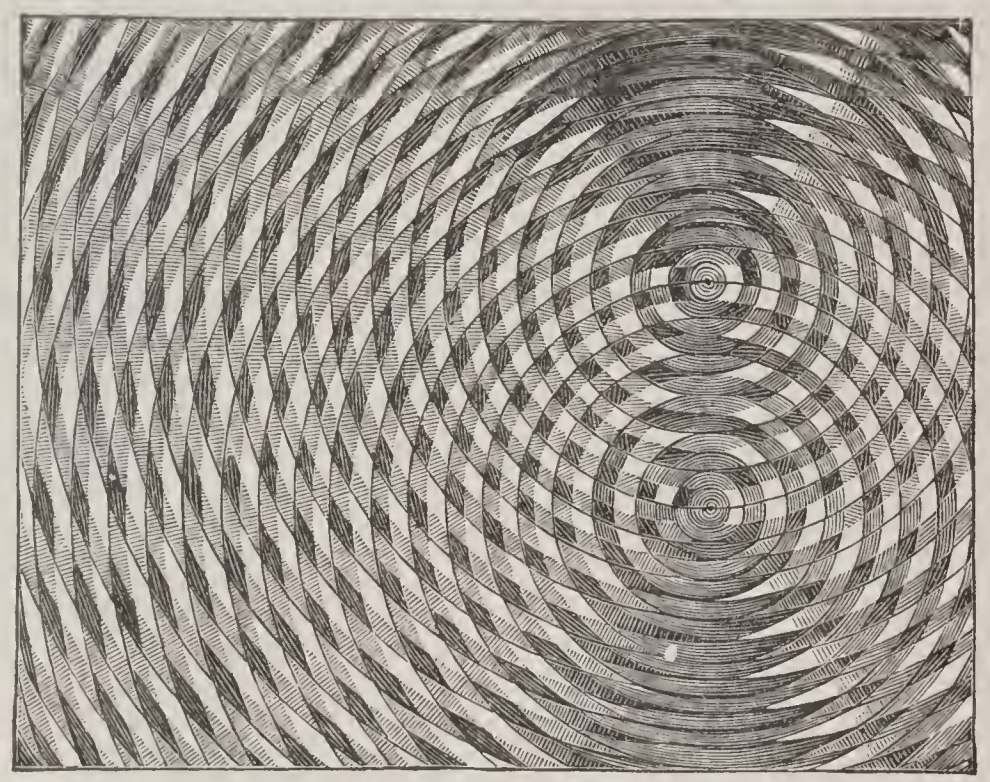
Thus each wave maintains and extends unbroken its circular and moving form, as if it had the entire surface to itself. And if, instead of two, we had three, or in fact, any number of pebbles dropped, the same result would be produced by each of them. In other words, it may be said, that every wave system superimposes itself upon, or adds itself to, a surface already moved by waves, as it would do were it acting alone on that surface at rest. Every wave system forms itself unhindered by those already present, and spreads after it has crossed these, upon the still quiescent surface of the water.

Large and Small Waves.

Once more: suppose that when we have flung a handful of pebbles upon the water, each creating its little system of spreading waves, a succession of large billows or swells be produced by the wind or a passing steamboat, we shall see that even these do not destroy the little waves of the pebbles, but take them on their backs, and having passed, leave them behind with their original forms and motions unaltered. Of all this we may witness a beautiful illustration when large drops of rain begin to fall upon the agitated surface of a lake or river.

Now, similar results, though invisible, are produced in the atmosphere by a blow on a drum or a bell, or by any number of such blows given in succession. These aërial vibrations, like the waves upon the water, do not destroy or extinguish one another. If a whole orchestra, composed of numerous and diverse instruments, play a piece of music together, each pipe and each string will create its own system of vibrations, which will pass outward through the atmosphere without disorder, each being endowed with an individuality as indestructible as if it alone had disturbed the quietude of the still air.

If now we advance to the far more attenuated and elastic medium of light, the ether, we shall find the same law still hold good. Here, as in the water and in the air, one system of vibrations, whether set in motion immediately by the sun, or by reflection of the sun's rays from some terrestial object, does not interrupt or confuse another system. Each, though it may have crossed a hundred or a thousand others, maintains its existence and its identity unchanged, and



INTERSECTION OF TWO WAVE SYSTEMS.

bears on its bosom a correct and clear representation of the centre or object from which it has proceeded. These radiant vehicles of light are infallible in their progress and office; from ten thousand points, and in ten thousand directions, they unceasingly carry and imprint the messages of the world and of the universe.

If we enter the garden, and bend over a bed of diverse flowers, we shall find that each green leaf and each variegated petal sends forth its little system of ethereal vibrations, announcing infallibly its particular form and color. If we stand confronted by

a regiment of soldiers, the countenance of each individual, in like manner, sends forth its system of vibrations, and all meet in the eye, and imprint their pictures of those countenances on the retina within a circle that does not exceed in circumference that of a dime—not one is omitted; not one is blurred. Light treats all objects alike.

Our Solar System

A FINE family of planets is that over which the sun presides, and an accurate description of these will be of interest to the reader. We are now speaking of the orbs that revolve around him.

MERCURY.

Above the sun, in the west, when that radiant body sets, or again before its rising in the east, is seen sometimes a small white star, slightly tinged with red. The Greeks call it Apollo, god of day, and Mercury, the god of thieves, who take advantage of the night to commit their misdeeds; for they saw in it two different planets, one a morning and the other an evening one, as they did also for a long time in the case of Venus, the Egyptians and Indians doing the same. The former gave it the names of Set and Horus; the latter those of Boudda and Rauhineya; names which bring to mind, like the preceding, the divinities of day and night. The Latins who, however, employed themselves very little with astronomy, in this respect remained in doubt. It has been only in later times that the identity of these two stars which, like Castor and Pollux, to which they are assimilated, never appear together, has been proved; its evening name Mercury, was the one retained.

Being the first planet of the system, Mercury always remains absorbed in the royal radiation of the prince of day; also, like a courtier, it is deprived of its individuality and blended in the personality of the ruling star. It gains nothing and loses much, seeing that it had not the honor of being known to the founders of astronomy. Copernicus despaired of ever seeing it: "I fear," said this great man, "that I shall descend to the tomb without having seen the planet." And, indeed, he who had transformed the system of the world, and taken in hand each of the planets to place them round the sun, died without having seen the first amongst them. Galileo was able to observe it, thanks to the glasses which he had invented, but it could not be said that he understood it sufficiently, as it was impossible for him ever to distinguish its phases.

The adversaries of the new system opposed the first astronomers, Copernicus, Galileo, and Kepler, on account of the

absence of phases in the planets Mercury and Venus. "For," said they, "if these planets revolved around the sun, they would change their aspect to our eyes, as the moon does, according as we see in front, in profile, or in rear, the illumined part, the side in fact which they turn towards the sun."

Copernicus and his colleagues replied, "We do not distinguish any phases, it is true; but if it only requires them in order that you should adopt our system, God will cause that there may be some." Indeed there were some. By the observation of the irregularities visible in the interior of the crescent or quarter, it has been observed that Mercury is rugged with high mountains, higher than those of the earth, although Mercury is a much smaller globe than ours. The existence of a denser and higher atmosphere than ours has been suspected.

Grotesque Romances.

In the middle of the last century, one of the numerous romancers who feigned voyages to the planets, pretended to know that the mountains of Mercury were all crowned with beautiful gardens, in which grew naturally not only the most succulent fruits which served as food to the Mercurians, but also the greatest variety of dishes. It is better, perhaps, to believe this than to think with Fontenelle, that the inhabitants of Mercury are all mad, and that their brains are burned with the violent heat which the sun pours upon their heads. But until an authentic voyager has made us sufficiently acquainted on this head, we will confine ourselves to the astronomical elements of the planet.

It revolves at a distance of 35,000,000 of miles from the sun; its diameter is 2960 miles; its day is 24 hours, 3 minutes, 28 seconds long; its year, 87 days, 23 hours, 14 minutes; and its seasons, 22 days only; its mass, compared to that of the earth is only $\frac{17}{100}$; its density is three times more than ours, and bodies which fall on its surface travel 7.45 feet during the first second of fall; and, lastly, it receives six times and a half more light and heat than the earth does.



CELEBRATED ASTRONOMERS.

COPERNICUS.
GALILEO. ISAAC NEWTON.
KEPLER. TYCHO BRAHE.

VENUS.

Thou little sparkling star of even,
Thou gem upon an azure heaven!
How swiftly will I soar to thee
When this imprisoned soul is free!

The young poetess who sang this charming song, Maria Lucrecia Davidson, escaped from her earthly prison towards her well-beloved star when she had scarcely seen her

seventeenth spring blossom forth. Some ill-disposed minds have asserted that although Venus is beautiful afar, it is frightful on a nearer view. We fancy our young and amiable readers are not of this opinion.

Indeed all the magnificence of light and day which we enjoy on the earth, Venus posseses in a higher degree. Like our globe, it is surrounded by a transparent atmosphere, in the midst of which are combined thousands and thousands of shades of light. Clouds rise from the stormy ocean, and transport into the sky, snowy, silvery, golden and purple tints. At morning and evening, when the dazzling orb of day, twice as large as it appears from the earth, lifts its



CRESCENT AND SPOTS OF VENUS.

enormous disk at the east or inclines towards the west, the twilight unfolds its splendors and charms. From here we can be spectators of this distant spectacle; for we distinctly see the daybreak and the close of day in the plains of Venus.

Day and night are of nearly the same duration as on the earth; the diurnal period of rotation of the planet is twenty-three hours, twenty-one minutes, seven seconds; it is consequently thirty-five minutes less than ours. Its year is two hundred and twenty-four days. Its mountains are much higher than ours. The inequalities which are noticed in the interior of the crescent are the highest points of the surface which still receive the sun's rays after these have left the plain. The height can be concluded from the time that these light-points take to disappear.

Rapid Motions.

We have just spoken of Venus as a crescent. Like Mercury, this planet is situated between the earth and the sun; and the circle which it describes during its year is comprised in the circle which the earth describes round the same body. Hence it follows that at certain epochs the planet Venus is exactly between us and the sun; and then it presents its dark part to us, as its illuminated portion is naturally on the side of the sun. At other times, when it is to the right or left of the sun, it presents only a quarter. Lastly, when Venus is on the other side of the sun, it presents its entire illuminated portion to us. At such times it is one of the beauties of the firmament, a gem of the first water.

The phases of Venus were seen for the first time by Galileo in the month of September, 1610, who beheld this spectacle with a joy impossible to describe, seeing that it eloquently testified in favor of the system of Copernicus, showing that like the earth and moon, the planets receive their light from the sun. When we say that these phases were for the first time seen in the month of September, 1610, you must not conclude that they did not exist before that epoch, but you must understand, that before that year no one had turned the telescope to the planet, and that with the naked eye, these phases are imperceptible.

According to the custom of the period, the illustrious astronomer disguised his discovery under an anagram, to maintain

the authenticity of this discovery in case of rivalry, and to give himself time to continue his observation and to perfect them. He finished a letter with this phrase: "*Hæc immatura a me jam frustra leguntur, d. y.*" which means, "These things unripened and as yet hidden to others, are at length read by me."

Under this cryptogram, it would be difficult to discover the idea of the phases of Venus. Our farthers were very ingenious, and in the present time certain discoveries would not have been so greatly contested, if astronomers had sometimes used the same ruse. In this phrase there are thirty-four letters. By placing them in another order, we get these words, in which the whole discovery is elegantly inscribed: "*Cynthiæ figuras emulatur mater Amorum.*" "The mother of the Loves puts on the phases of the moon."

A Shrewd Reply.

Galileo was very cunning. Two months later, Father Castelli asking if Venus had phases, he replied, "My state of health is very bad, and I find it better to be in my bed than in the dew." It was only two days before the end of the year that he announced the above discovery.

This globe presents the greatest semblance to our own, and it has nearly the same astronomical elements, size, volume, weight and density; only it is much nearer to the sun than we are. From the commencement of ancient poetry, its position near the sun, which causes it to appear at sunrise and sunset, attracted contemplative minds towards it. In the middle ages, a worthy father took an ecstatic voyage in the heavens, and in Venus saw only young people of ravishing beauty, living in the midst of perfect happiness; in his sight, these were the guiding spirits of the planet Venus, for in olden times it was believed that a legion of angels or genii presided over the direction of each of the heavenly spheres.

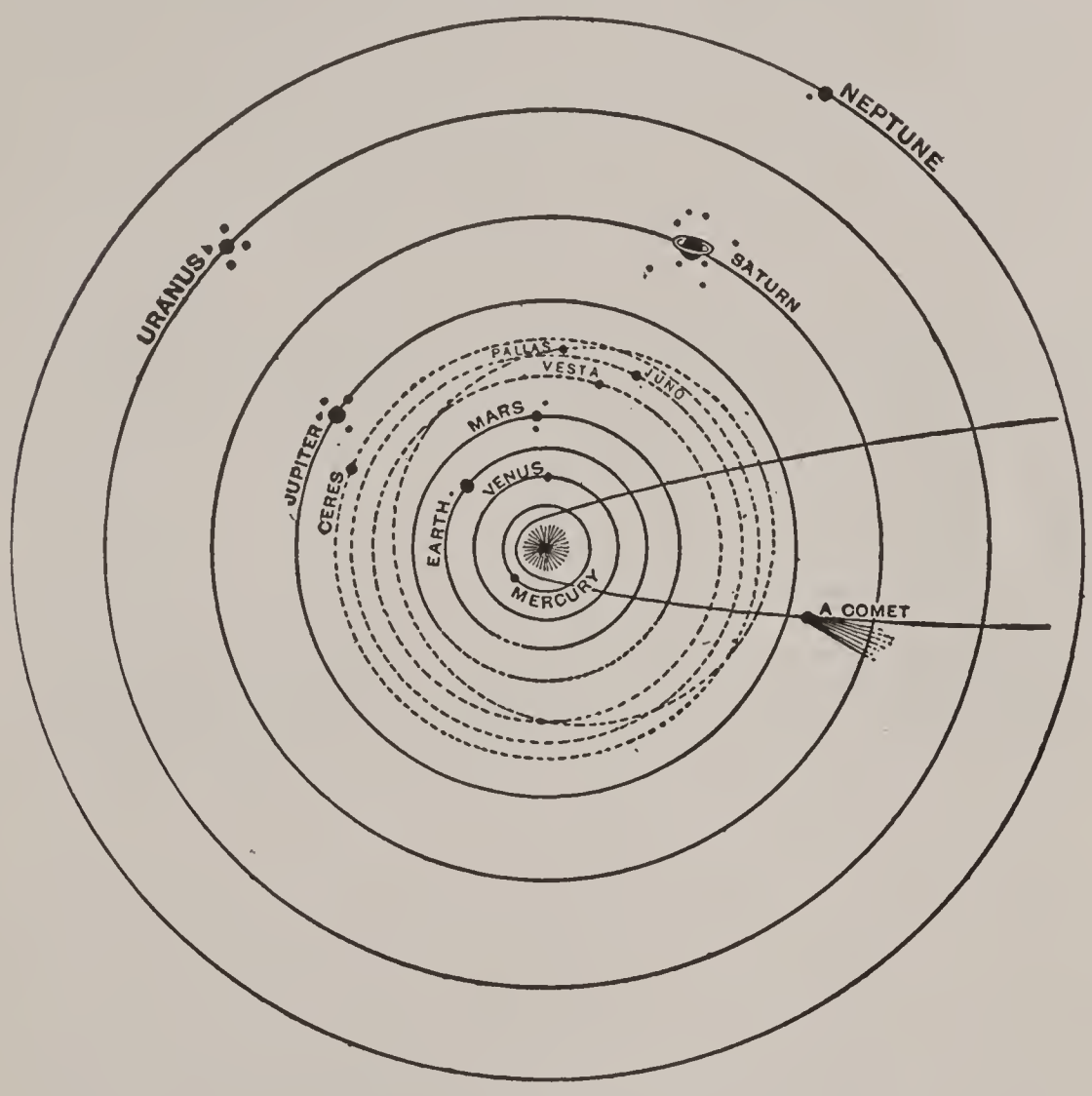
MARS.

All the maledictions of mortals have fallen on Saturn and Mars. Beginning with war, that scourge of humanity of which it will have great trouble to rid itself, all public misfortunes caused by power have been attributed to Mars, which, if it knew what the earth thought of it, ought to regard us with an evil eye. It is, nevertheless, innocent of all these calumnies, and we ought not to speak ill of it, presenting, as it does, most resemblance to ourselves. Indeed the world of Mars resembles the earth so much, that if we happened one day to be traveling there and lost our way, it would be almost impossible to recognize which of the two were our planet. Without the moon, which would charitably remove our uncertainty, we should run a great risk of arriving amongst the inhabitants of Mars, expecting to descend into the United States, or some other terrestrial quarter.

Indeed, the planet Mars in our telescopes presents the same aspect as the earth must do to the inhabitants of Venus; a circular disk, rather flattened, turning on itself in about twenty-four hours, furrowed from time to time by fleeting clouds, diversified with here dark and there light plains, revolving obliquely on an axis enveloped with an atmosphere and with snow-covered poles. On this planet the seasons are nearly of the same intensity as our own, but their duration is twice as long; for Mars only accomplishes its annual revolution around the sun in 1 year, 321 days, and 22 hours, or 1 year, 10 months and 21 days.

We may notice certain differences be-

tween the aspect of Mars and our own world. Whereas the earth seen at a distance must appear tinted with green, on account of the color of its atmosphere, its vegetation and water, Mars is shaded with red, and it is this shade which gives it the reddish light with which it is seen to shine. Doubtless this characteristic color is produced by the dominant coloring of its surface; either its soil is thus colored like that of our deserts, or its seas, its vegetation, or the vapors



THE SUN, PLANETS AND COMET.

rising into its atmosphere, are chiefly clothed with this shade. Nevertheless, the poles always preserve their brilliant light. In 1837, it once happened that Mars was, during the observations, completely darkened by a cloud, with the exception of the poles which stood out distinctly.

Removed from the sun to a mean distance of 139,000,000 of miles, and encircling the the earth's orbit in that which it describes round the central body, there are certain periods where these planets are very near together; that is, when they are both on the same side of their path with regard to the sun. Sometimes they are not more than 48,000,000 of miles distant from each other. Mars has two satellites, which have been discovered at a comparatively recent date.

The conjunction of two planets is the point of their orbits where they are on the same side of the sun, and are the nearest possible to each other; the term opposition is given to the opposite point of their paths, when they are on opposite sides of the sun, except in the case of Mercury and Venus. In olden times these positions greatly exercised the sagacity of horoscope-seekers, and human destinies received fancied predictions, according as the god of war was in conjunction in such and such a sign of the zodiac.

The Little Worlds.

The interior planets, Venus and Mercury, whose orbits are enclosed in that of the earth, have no opposition, but they have two conjunctions; the superior, when the planet is beyond the sun and in one right line; the inferior, when it is situated between the sun and the earth. The exterior planets, those which enclose the terrestrial orbit, and of which Mars is the first, have only the superior conjunction.

At about 80,000,000 of miles, beyond the planet Mars, between the orbit of this planet and that of Jupiter, we meet with the group of small planets, of which we have already spoken. These are very little worlds, if even they deserve this name, which have

scarcely the extent of a province, or even a department. They gravitate in this zone in considerable numbers, for there may exist several thousands. Perhaps they are *débris* of a larger world, shattered by some catastrophe; perhaps they have been formed in this region of space in the fragmentary state in which we now see them.

Putting aside the title of original greatness of these asteroids, and the fate which attends them, let us traverse their colony, and beyond it get near the most magnificent of the worlds of our system.

JUPITER.

She said:
Oh! that it were my doom to be
The spirit of yon beauteous star,
Dwelling up there in purity,
Alone, as all such bright things are:—
My sole employ to pray and shine;
To light my censer at the sun!

The orb of Jupiter is more bulky than all the other planets of our system; it is only a thousand times smaller than the sun, which makes it, if we remember the volume of that radiant body, from fourteen to fifteen hundred times larger than the terrestrial globe. Also, although it revolves in an orbit nearly 475,000,000 of miles distant from the sun, and receives a much fainter light than that received by the earth, its size is evidenced by the light with which it shines during our starry nights, equal and often superior to that with which Venus shines. Jupiter is therefore reckoned among the most beautiful objects of the heavens. As it is always in the zodiac, and when Venus is visible in the evening, it is always in the west, it is easily recognized. At whatever period of the year, therefore, you see a very bright star, either in the east, or high up among the zodiacal constellations, you may be certain that it is Jupiter.

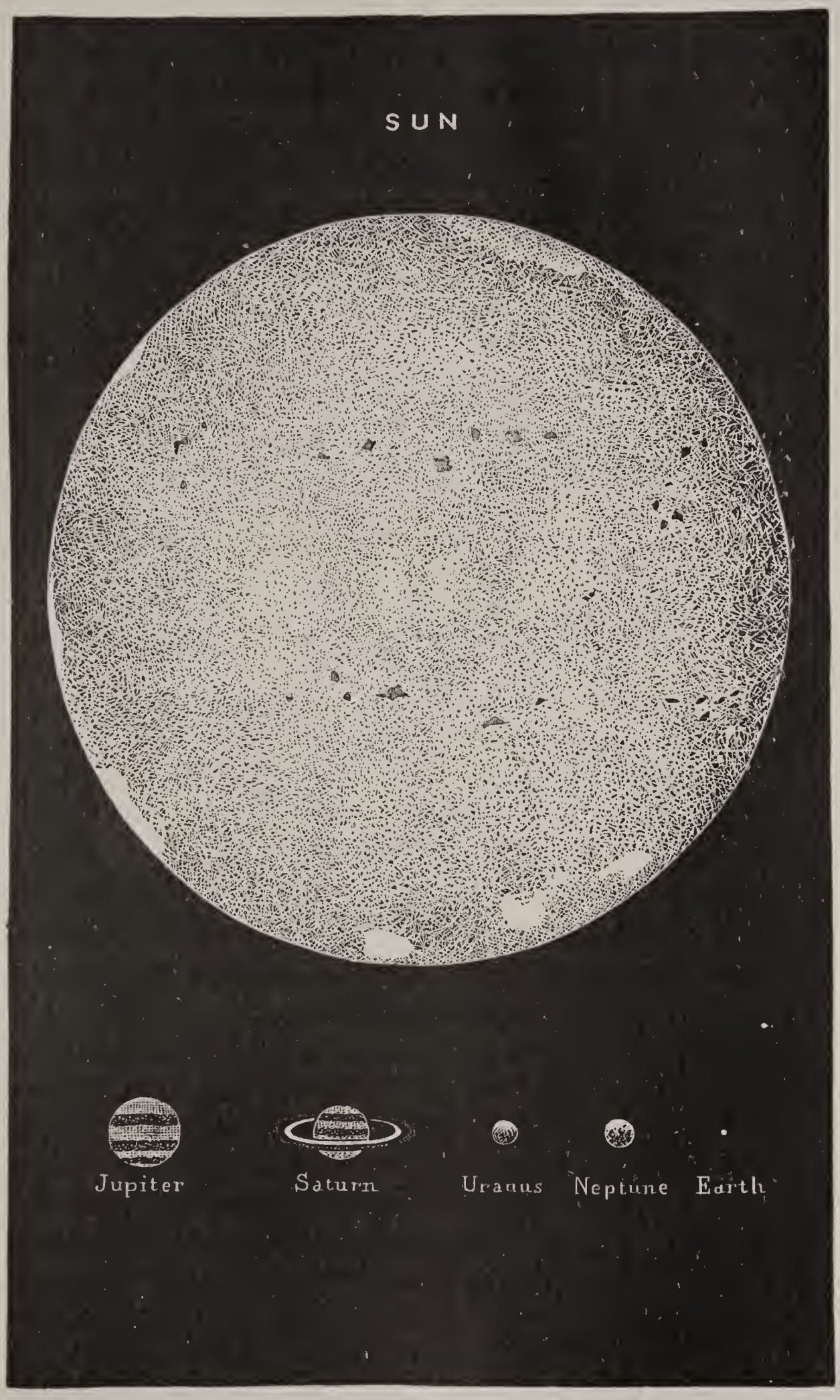
This planet is a charming one, so far at least as we are able to judge from afar and without going there. To begin with, a continual spring rejoices its surface. If it is ornamented with flowers, which we do not doubt, though we know not of what these flowers consist, they do not only survive "the span of a morning," as our roses do, but live much longer. Scarcely have the oldest begun to dry up and fade but they are replaced by lovely buds, opening before the first have died away. Not only is the Jovian year equal to twelve of ours, but it is scarcely known when the yearly period begins or ends.

The King of the Planets.

Then Jupiter presents a surface 126 times more extensive than the terrestrial surface. We speak of surface, not volume. Now, a hundred and twenty-six earths placed side by side, and on which the human race would be able to spread itself at will, would constitute a very fine country. We ought, then, not to doubt that such an empire has been formed to serve as an abode for a race of beings, venerable and worthy of our respect. We reason thus of Jupiter, because we have had the necessary means to measure and appreciate it at its just value. But it is necessary to add something to complete the comparison between this world and our own.

Because we find, by observation of the Jovian planet, excellent reasons for believing that its inhabitants are very favored, it does not follow that the aforesaid inhabitants make similar reflections on us. There is a very good reason why they do not occupy themselves with us—they are probably not acquainted with our existence. And, indeed, if ever, at a future time, more or less distant, you should happen to inhabit Jupiter, you would have great trouble to discover

your old country. To do so you would have to rise a little before the sun (and mark | or six minutes before the rising look to the east for a very small white star. With good eyes, you perhaps would perceive it. In this case, you would know that our earth exists.



RELATIVE SIZES OF THE SUN AND PLANETS.

Again, you would make the same search six months later, at the west, a few moments after the setting of the sun. Such is the condition of the inhabitants of Jupiter with regard to us. They can never see the earth during the night, although it is precisely in the middle of clear nights that we are best able to observe this magnificent planet.

SATURN.

If you were to take a journey to the planet Saturn, which is scarcely more than 900,000,000 of miles from us, you would feel on approaching it an unspeakable astonishment, to which certainly no sentiment of surprise felt on the earth can be compared. Imagine an immense globe, not only of the size of the earth, but as large as 734 earths put together. It revolves on an axis with such rapidity, that in spite of its size it accomplishes its diurnal rotatory movement in about ten hours. Around

there are only five hours from the setting to the rising of this body on Jupiter) and five | it, at 20,000 miles distance above its equator, an immense ring, flat and relatively very thin,

surrounds it on all sides. This ring is followed by a second, and this one by a third.

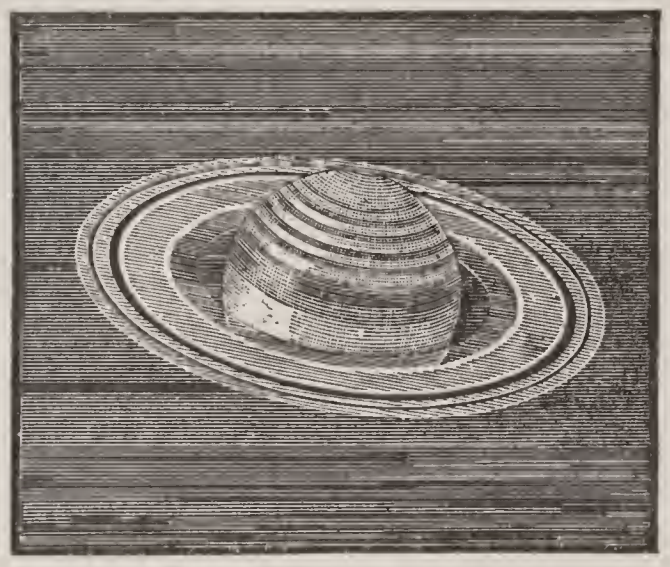
Now this system of multiple rings is only a few miles thick, while its diameter is 166,000 miles. They do not remain immovable, but are carried along with a circular movement round the planet, this movement being of still greater rapidity than that of the planet itself. The domain of the Saturnine world is not confined to this. Beyond the ring, eight moons are seen revolving in the heavens around this strange system; the nearest of these satellites is separated from the planet's centre by a distance of 120,000 miles; the most remote has an orbit of 2,293,000 miles from the centre of the planet. Saturn then governs a system which measures not less than four and a half millions of miles in diameter.

By the side of this world the earth makes but a poor figure, and Micromegas, in the fable, was to be pardoned when on coming out of Saturn he mistook the earth for a molehill. Its years are thirty times longer than ours; of its seasons each lasts seven years and four months; a change remarkably like that which distinguishes our own diversifies them; a regenerating spring succeeds the rigor of winter; summer and autumn pour forth their alternate fruits.

URANUS.

On the 13th of March, 1781, between ten and eleven in the evening, a quondam organist of Halifax, who had himself made the best telescope then in existence, observed the small stars of the constellation of the Twins, with a telescope of nine feet focal length, and a magnifying power of 227. During his observation he perceived that one of the stars presented an unusual diameter. Astonished and desiring to prove the fact, he took an eyepiece magnifying double, and found that the diameter of the star increased whilst that of the others remained the same. More and more surprised, he fetched his magnifying power of 932, being quadruple that of the first, and again observed it. The mysterious star was still larger.

From that time, he no longer doubted; this was a new body, not a star. He continued the following days, and noticed that it slowly moved among the others. It was then a comet. Herschel described it to the Royal Society in a paper entitled, "Account of a Comet;" and the scientific world of all countries registered this new cometary body,



THE PLANET SATURN.

and set about observing it in order to determine its orbit. If Herschel had directed his telescope towards the constellation of the Twins eleven days sooner, said Arago, the real movement of Uranus would have escaped him, for this planet was on the second at one of its stationary points. It may be seen by this remark on what the greatest astronomical discoveries depend.

The name of the astronomer was then so little known that it is found written in every way; Mersthel, Herthel, Hermstel, Horochelle. Nevertheless, the discovery of a new comet was an event important enough to induce a study of the new body. Laplace, Mechain, Boscowich and Lexell endeavored

to determine the orbit along which it moved. Many months elapsed before the astronomers guessed that it was a real planet; and it was not until after having observed that all the imagined orbits for the pretended comet were soon contradicted by observation, and that it probably had a circular orbit, much more distant from the sun than Saturn, until then the boundary of the system, that they agreed to regard it as a planet.

The New Member of the Family.

Still this was but a provisional agreement. It was, indeed, more difficult than was thought thus to increase unscrupulously the family of the sun. Many reasons of propriety were opposed to it. Old ideas are tyrannical. It had been the custom for so long to regard the venerable Saturn as keeper of the frontiers, that it required a great effort to determine upon extending these frontiers, and guarding them by a new world. It happened in this as in the discovery of the small planets situated between Mars and Jupiter.

Two years before this discovery was made, Kepler imagined, for the harmony of the world, a large planet in this space, and the most frivolous and senseless considerations were urged against it. For instance, they reasoned: "There are only seven openings in the head, the two eyes, the two ears, the two nostrils, and the mouth; there are only seven metals, there are but seven days in the week, therefore there are but seven planets," etc. Considerations like these, and others no less imaginary, often hinder the progress of astronomy.

When William Herschel, having been present as a spectator at the debates created by his discovery, came to the belief that his comet was a planet situated at the confines of our system, he claimed the right, which was indisputably his, of christening the new star. Animated by a lawful motive of gratitude towards George III., who had appreciated his astronomical worth and given him an annual pension, he at first proposed the name of Georgium Sidus, George's star, as Galileo had called the satellites of Jupiter discovered by him, the Medici's stars, and as Horace had said Julium Sidus.

Others proposed the name of Neptune, in order to preserve the mythological character; Saturn would be thus found between his two sons, Jupiter and Neptune. Others added to Neptune the name of George III., others again proposed Astræ, considering the goddess of Justice was as far as possible from the earth; Cybele, mother of the gods; Uranus, the most ancient of all to whom reparation was due after so many hundred years of neglect. Lalande suggested Herschel's name to immortalize the discoverer. These two denominations prevailed.

For a long time the planet bore the name of Herschel, but custom has since declared for the mythological appellation of Uranus. The discovery of Uranus has increased the radius of the solar system from 872,000,000 of miles to 1,753,000,000. Compared with the preceding, this planet is not very large, for it is scarcely eighty-two times more bulky than the earth. Its seasons last twenty-one years, of ours, and its years eighty-four years and a quarter. Around it revolves eight satellites, six of which Herschel himself discovered.

NEPTUNE.

The world which here marks the frontiers of the system, is situated at such a distance from the sun, that the light and heat which it receives from it are thirteen hundred times less than that with which the earth

is enriched, so that no great difference can be noticed between the day and night of this distant planet, and to it the solar disk is nearly reduced to the smallness of the stars.

In Eternal Twilight.

Two billions seven hundred and forty-six millions of miles is the distance which separates this world from the sun. Until the time of its discovery, the frontiers of the planetary system already augmented by the addition of Uranus, were confined to an orbit of 1,753,000,000 of miles in radius. Does this, then, imply that these are the utmost limits, and that analysis will not be able to go further and add fresh members to the already increasing family of the sun? No; when observations spreading over a long series of years shall have been made, and compared with each other, the universal law of gravitation by which the existence of this planet was known before ever being perceived in the field of the telescope, will prove the existence of others if others exist, which is probable; and the progress of optics following equally the progress of astronomy will give to the visual power, again magnified, the power to discover such distant planets which will, doubtless, be of the sixteenth or seventeenth magnitude.

Imagine a body a hundred times larger than the earth carried into the gloomy deserts of space to the distance of the Neptunian orbit. It floats, isolated, in the obscurity of space, following an immense but purely ideal curve, and which exists only in theory in the decree of eternal laws. It follows this curve, and revolves on itself without ever deviating from its path. To finish its immense route and return to its starting point, it requires one hundred and sixty-four years. It will return and again pass through this mysterious point of space which it passed nearly two centuries before.

What power moves it? What hand guides this blind body through the night of the distant regions, and what causes it to describe this harmonious curve? It is universal attraction.

Instead of following a regular ellipse round the sun, the planet Uranus underwent, from some unknown cause, a perturbation, which retarded its theoretical path, and extended its circular curve towards a certain point, as if an attractive cause had seduced the traveler from its path, and had made it deviate from its proposed route. It was calculated that, in order to produce at this point an attraction of such intensity, it was necessary that there should be on that side of the system beyond Uranus, a planet of a certain mass, and at a certain distance.

A Remarkable Discovery.

Two astronomers, the one French, the other English, set to work at the same time in this research. They discovered the disturbing cause theoretically, and observers directed their telescopes to the spot thus indicated by theory. They were not long in actually discovering the body near the spot pointed out, and they were able to announce to the world the most brilliant confirmation of universal gravitation.

This discovery justly ranks as one of the most celebrated among the dazzling triumphs of astronomical science. If anything in creation might be expected to be circumspect and steady, it is one of the planets, like Neptune, that helps to form the solar system. But like a swift-running locomotive, it swayed, trembled, threatened to leave the track. "Surely," said the astronomer, "there must be some world beyond that is drawing it." And there was.

The Earth's Satellite

OUR earth is not rich in respect to satellites, possessing as it does only one, which, however, is of dimensions ample enough as compared to it; this is the moon, the faithful companion of its course. Other planets, it is true, like Jupiter and Saturn, are more richly endowed, and have from four to eight satellites; but again there are others which do not possess any, as is the case with Venus and Mercury.

The sole and faithful satellite of the earth, formed by a fragment detached from it, now cold and wan, rolled round us when it began, a red and blazing sphere, vomiting torrents of fire from its whole surface. Whilst gravitation was regulating its form and path, the moon, in the course of thousands of years, exhausted its fires to show us at last its pale and silvery face, the sad luminary of our nights, the splendid nocturnal mirror which reflects to us, pale and cold, the divergent rays of the sun.

Compared to the immeasurable distances of the nebulæ and stars, the space which separates us from our satellite is quite insignificant; she is our next-door neighbor and the eye can so clearly discern her form and peculiarities, that she seems almost to touch us. But this insignificant distance, abstractly considered, is yet vast enough. The distance from the earth to the moon is about 237,000 miles. If it were possible to get there by means of steam, it would require one year and about three hundred and twenty-two days for a locomotive starting from our globe and traveling at a high rate of speed to reach the moon and land its passengers; yet this is but a step compared to the distances of the stars.

Grand Lunar Mountains.

The moon is in every part roughened with eminences of different shapes, but they only very rarely group themselves into mountain chains comparable to those of our globe. The Alps, Caucasus, and the Apennines represent the principal ones. Certain isolated summits have received the names of celebrated men, but those of past times have been chosen in order not to excite any jealousy; we travel from the Mountain of Aristotle to that of Hipparchus, from that of Ptolemy to that of Copernicus. The astronomers have very properly not forgotten their claims.

The highest lunar mountains attain an altitude which surpasses most terrestrial elavations, a fact which may well astonish us. Generally they do not rise beyond 22,750 feet. But in proportion to the size of the planet, we may say that the mountains in the moon are much loftier than those of the earth. The summits of Mount Dœrfel are

24,700 feet above the valleys which environ it, whilst the crest of Mont Blanc only rises 15,632 feet above the level of the sea.

Most of the mountains of our pale companion are of volcanic origin, and its surface has been so shattered by subterranean fires that in many places the craters are heaped up close beside each other. Probably no star was ever so horribly torn by the fury of volcanoes. These even attain proportions far beyond what is seen in our globe. Some of those lunar craters are four or five leagues in diameter, and the gaping mouth of the volcano of Aristillus, still more prodigious, is ten leagues from one ridge to the other! Our glasses enable us to see these extinct craters in such proportions, that none of their details escape us; whilst, were we on the moon, our telescopes, according to Humboldt, would scarcely enable us to make out terrestrial volcanoes.

Seen from the earth many lunar volcanoes appear very much depressed, and the edges of their craters resemble so many flattened rings, projecting very little above the plains. Some regions are so riddled with them that their mouths touch. Others surmount lofty summits, and their crenelated ramparts surround enormous excavations, which pierce deep into the mountains below.



VOLCANIC CRATERS ON THE MOON'S SURFACE AT SUNSET.

It seems strange to say that the geography of the moon, or at least of much of that portion of her surface which is presented to our view, is better known than that of many parts of our own earth; and yet this is quite true. Our telescopes are of such power that if there were an object on the moon's surface as large as the Capitol at Washington, they would surely reveal it to us.

Formerly the dark patches which cover part of the moon's surface were considered as representing lunar seas, but at present men are disposed to look upon them as only immense plains. The first astronomers gave them names full of poetry. There was the Sea of Tranquility, the Sea of Clouds, the Sea of Nectar, the Ocean of Tempests, and the Sea of Serenity.

The rocky and shattered soil of our satellite is perfectly bare; not a blade of grass grows there, not a flower opens. Totally deprived of water and air, life is an impossibility. A threefold death would overtake the least animal that happened to alight there; a squirrel would perish of hunger, thirst, and asphyxia! In these cold and horrid realms of the moon, everything is plunged in torpor and silence; the echoes are mute, and the breath of a zephyr never plays around the summits of the rugged mountains.

A Desert World.

By means of our instruments, which have now been brought to so great perfection, we can pry into the minutest details of our satellite, and examine them with as much accuracy as if it were some distant view on earth; hence we can, to a certain extent, make out its geological disposition. The precision of our glasses has been carried to such a pitch, that we could with them easily perceive large buildings, if any existed on the lunar surface; we could even make out troops of animals moving about. It would, it is true, be impossible to perceive one of its inhabitants traversing the valleys of its silver crescent, but if the much spoken of Selenites existed, we should certainly perceive their movements when they were collected into dense masses. According to Humboldt, however, there is only a noiseless, silent desert there.

Sir Walter Scott gives us, in one of his fine poetical outbursts, this apostrophe to the lunar world:

> Hail to thy cold and clouded beam,
> Pale pilgrim of the troubled sky!
> Hail, though the mists that o'er thee stream
> Lend to thy brow their sullen dye!
> How should thy pure and peaceful eye
> Untroubled view our scenes below?
> Or how a tearless beam supply,
> To light a world of war and woe?

There is a great contrast, not only apparent but real, between the serene tranquility of the lunar disk and the great movements which are ceaselessly carried on on the surface of our world. On approaching the moon nothing is seen of the physical causes which make the earth a vast laboratory wherein a thousand elements contend or unite with each other.

There are none of those tumultuous tempests which sometimes sweep over our undulated plains; none of those hurricanes which descend in waterspouts to be swallowed up in the depth of the sea; no wind blows, no cloud rises to the heavens. There white trains of cloudy vapors are not seen, nor those laden masses with heavy cohorts; the rain never falls, and neither snow, nor hail, nor any of the meteorological phenomena are manifested there.

Silence and Death.

But, on the other hand, the magnificent tints which color our sky at sunrise and twilight, the radiation of the heated atmosphere, are never seen there; if winds and tempests never blow, neither is there the balmy breeze which descends npon our coasts. In this kingdom of sovereign immobility, the lightest zephyr never comes to caress the hilltops; the sky remains eternally asleep in a calm incomparably more complete than that of our hottest days when not a leaf moves in the air. This is because on the surface of this strange world there is no atmosphere. From this privation results a state of things difficult to realize.

In the first place, the absence of air implies also the absence of water and every liquid, for water and liquids can only exist under atmospheric pressure: if this pressure is taken away they evaporate and their beds are dried up. Thus, for instance, if you

place a vessel filled with water under the receiver of an air-pump, and then, by pumping out the air which is in the receiver, you make a vacuum, you will soon see the water boil, even when the place where the experiment is made is frozen with the most intense cold. The boiling disengages vapors, and, finally, the water is evaporated. Now let us suppose, that, at a certain period of its past existence the moon had, like the earth, seas and rivers, and that by the aid of any apparatus, its seas and rivers were made to boil and to fall into vapor again; by continuing this operation long enough the moon would be made completely dry: this is precisely what has happened.

Since the distant period of its formation in a fluid state, it has lost all its liquids and vapors, and now a linnet would die of thirst in the midst of the seas of the moon. These seas do not contain a drop of water. These, it will be said, are singular seas. And, indeed, no one will hold that their title is logical. But we have seen that they were named at a time when people did not know the lunar surface sufficiently well to guess that it existed without air and water.

From the absence of air follows another very curious fact—the absence of sky. An immensity without depth is traversed by the sight, and in the day as in the night are seen the stars, planets, comets, and all the bodies of our universe. The sun passes among them without extinguishing them, as it does to us. Not only does the moon not possess this perpetual diversity which the movements of the air produce on our world, but it has not the azure vault which covers the earth with such a magnificent dome; space is a black and a perpetually black abyss.



TELESCOPIC VIEW OF THE MOON.

Whilst on high there reigns darkness, below there is silence. Not the least sound is ever heard; the sigh of the wind in the woods, the rustling of foliage, the song of the morning lark, or the sweet warbling of the nightingale never awakens the eternally dumb echoes of this world. No voice, no speech has ever disturbed the intense solitude with which it is overspread. Unchange-

able silence reigns there in sovereignty. Tall perpendicular mountains divide its surface. Here and there are seen worn out craters rising towards the sky, white rocks heaped up like the ruins of some long-passed revolution, crevasses crossing the surface as in lands dried by the burning rays of long summer days.

That which renders the spectacle more strange is that the absence of vapors causes the absence of perspective as well as the absence of all tints, and we see only white or black according as the object is in the sun's light or in shadow, the objects succeeding each other as far as the horizon without losing brightness or contour. The moon is such a singular world that its mountains may be measured as well by depth as height. This paradox, rather difficult to understand, arises from the fact that the mountains of the moon are not like those of the earth, but are hollow. When we arrive at the top there is a ring, the white, rugged and sterile mountains, and lofty and deserted craters.

These solitary and dried-up landscapes remind us of what Fontenelle said regarding



PART OF THE MOON'S CRESCENT DURING THE FIRST QUARTER.

the changes at work on the surface of our satellite, caused, not by the movements of life, like those which regulate terrestrial nature, but by the simple falling down of lands. "Everything is in perpetual motion," he says. "Even including a certain young lady, who was seen in the moon with a telescope about forty years ago, everything has considerably aged. She had a pretty good

face, but her cheeks are now sunken, her nose is lengthened, her forehead and chin are now prominent to such an extent, that all her charms have vanished, and I fear for her days."

"What are you relating to me now?" interrupted the Marchioness.

"This is no jest," returned the author. "Astronomers perceived in the moon a particular figure which had the aspect of a woman's head, which came forth from between the rocks, and then occurred some changes in this region. Some pieces of mountain fell, and disclosed three points which could only serve to compose a forehead, a nose, and an old woman's chin."

Gleaming Mountain Crests.

We do not know whether the face, of which the ingenious writer speaks, existed anywhere but in his imagination; but changes, even caused by simple fallings, are extremely rare, if even they are still produced. For a hundred years, for instance, during which period a day has not elapsed in which the moon has been visible, without it being observed by the telescope, the slightest movement has never been noticed.

At the commencement of the century, it is true, people fancied they observed active volcanoes, but they have since discovered that very probably what were then taken for volcanoes were nothing more than the white crests of certain mountains, their form or their structure being more favorably adapted to reflect light. Thus the orb of night remains dumb and silent. Why this sad and solitary fate? This is the question asked by the poet Shelley:

> Art thou pale for weariness,
> Of climbing heaven and gazing on the earth,
> Wandering companionless
> Among the stars that have a different birth,
> And ever changing, like a joyless eye
> That finds no object worth its constancy.

Now that we have pointed out how the moon is an inhospitable world, poor and destitute of nature's gifts, it is necessary to retrace our steps, and show it to you as a magnificent world, worthy of admiration and esteem. We do not wish to contradict the foregoing words; but in order not to leave a bad impression with regard to our faithful friend, we wish to remind you that nature, even when it appears to disgrace some of its works from some points of view, favors them with very desirable riches when regarded under other aspects.

A Magnificent Spectacle.

To an astronomer, the moon would be a magnificent observatory. In the daytime he could observe the stars at noon, and thus discover, without trouble, that they reside eternally in the heavens. With us, on the contrary, among the ancients, were a great number who imagined that they were lighted up in the evening and extinguished in the morning. If, then, people make astronomical observations on the moon, the sun is not a tyrant who governs the heavens absolutely; it allows the stars to be enthroned peaceably with it in space; and studies commenced during the night can be carried on without difficulty during the day until the following night.

On our satellite the nights are fifteen times twenty-four hours long, and the days are of the same length; but there is an essential difference to remark between the nights of the lunar hemisphere, which faces us, and those of the hemisphere which we do not see.

You must have noticed that the moon always presents the same side to us. From the beginning of the world it has never shown but this side. We read in Plutarch, who wrote nearly two thousand years ago,

a thousand conjectures relative to the side of the moon always turned toward us. Some said it was a large mirror, well polished and excellent, which sent back from afar the image of the earth ; the dark portions represented the oceans and seas, while the bright portions represented the continents.

Others believed that the spots were forests, where some placed the hunts of Diana, and that the most brilliant parts were the plains. Others, again, saw in it a very light, celestial earth ; they stated that its inhabitants must pity the earth which is below them, and which is only a mass of mud. Others, again, and their singular opinion was widely spread, added that the beings who peopled it were fifteen times larger than those of our earth, and by the side of the lunar trees our oaks would only be small bushes. All this to explain the nature of the lunar face eternally turned towards us.



THE EARTH AS SEEN FROM THE MOON.

Now, if we never see but one side of the moon, it follows that there is only one side of this body which sees us ; so that half of the moon has a moon—namely, our earth, and the other half is deprived of one. If there are any inhabitants on the hemisphere turned from us, they do not guess that the moon is only a body placed for illumination of our nights, and they must be greatly astonished when the narratives of travelers relate to them the existence of our earth in the heavens. If the travelers there resemble those here, what tales must they spread with regard to us? But, also, how useful must the earth be to the lunar nights, and how beautiful we are—from afar!

Silvery Splendors.

Fancy to yourself fourteen moons like that which gives us light, or more properly speaking, a moon with fourteen times the extent of surface, and you will have an idea of the earth as seen from the moon. Sometimes it only presents a fringed crescent, a few days after the new earth ; sometimes it presents the first quarter ; sometimes it shines out with its full disk, spreading its silvered light in floods. The most fortunate thing is, that it begins to shine precisely in the evening, that its brightest light, its full disk, is precisely at midnight, and that it fades away in the morning at the time when it is no longer required. And it is known that from the evening to the morning is fifteen times twenty-four hours with our neighbors the Selenites.

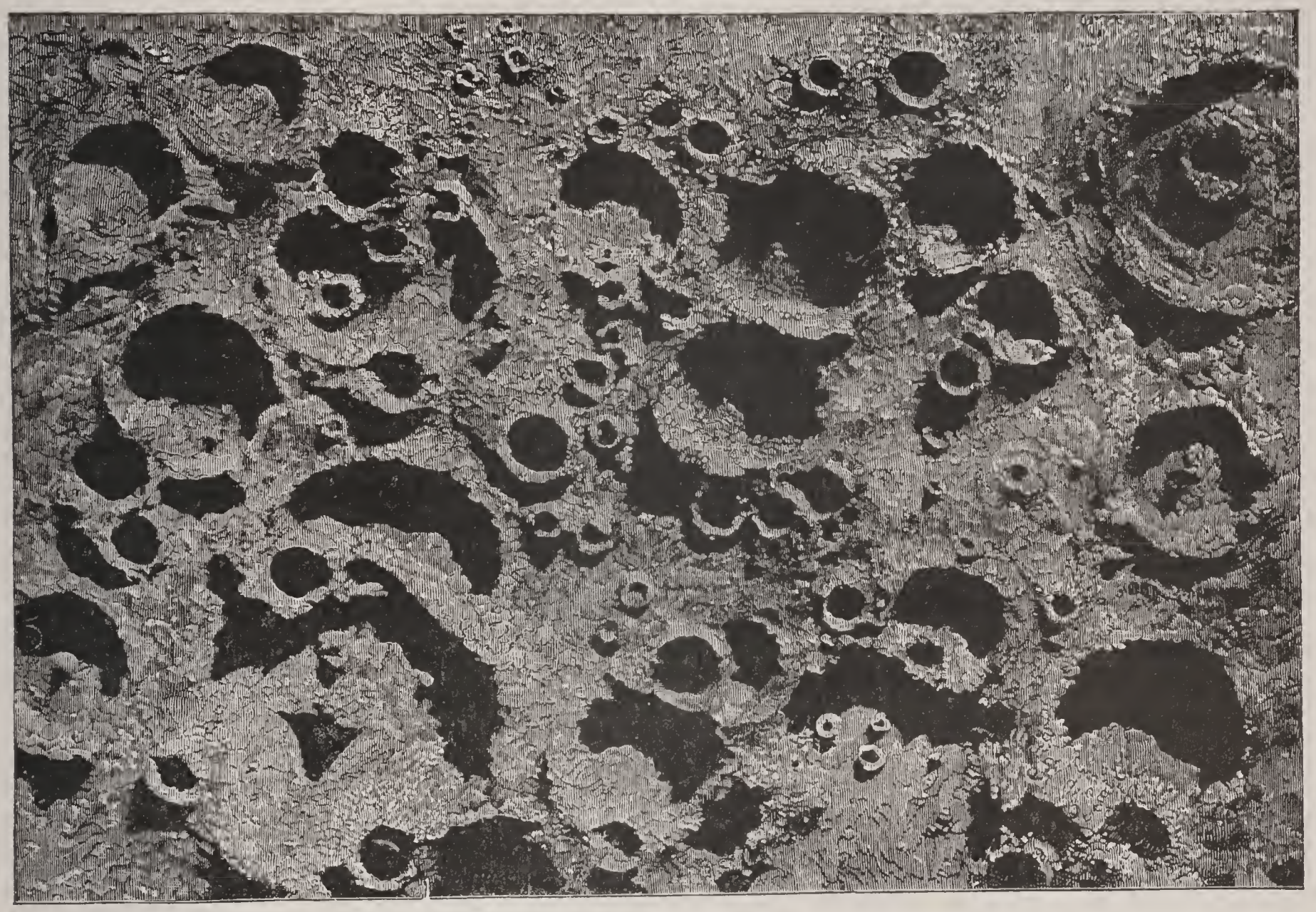
How much more reasonable are these

inhabitants than we are in believing that the moon was created and placed in the world expressly for them, and that we are only their very humble servants!

The lunar caverns form a very peculiar and prominent feature of the moon's surface, and are to be seen in almost every region, but are most numerous in the southwest part of the moon. Nearly a hundred of them, great and small, may be distinguished in that quarter. They are nearly of a circular shape, and appear like a very shallow egg cup. The smaller cavities appear within almost like a hallow cone, with the sides tapering towards the centre; but the larger ones have, for the most part, flat bottoms, from the centre of which there frequently rises a smal lconical hill, which gives them a resemblance to ridges and mountains.

In some instances their margins are level with the general surface of the moon; but in most cases they are encircled with a high ridge of mountains marked with lofty peaks. Some of the larger of these cavities contain smaller cavities of the same kind and form, particularly in their sides. The mountainous ridges which surround these cavities reflect the greatest quantity of light; and hence that region of the moon in which they abound appears brighter than any other.

From their lying in every possible direction, they appear, at and near the time of full moon, like a number of brilliant streaks or radiations. These radiations appear to converge towards a large brilliant spot surrounded by a faint shade, near the lower part of the moon, which is known by the name of Tycho, and which every one who views



SINGULAR ASPECT OF THE MOON'S SURFACE.

the full moon even with a common telescope, may easily distinguish.

In regard to their dimensions, they are of all sizes, from three miles to fifty miles in diameter at the top; and their depth below the general level of the lunar surface varies from one-third of a mile to three miles and a half. Twelve of these cavities, as measured by Schroeter, were found to be above two miles in perpendicular depth. These cavities constitute a peculiar feature in the scenery of the moon, and in her physical constitution, which bears scarcely any analogy to what we observe in the physical arrangements of our globe.

A Remarkable Crater.

It is a curious fact that the surface of the lunar hemisphere was known before that of our own earth, and the heights of all its mountains were measured before the same thing was done for our own. The volcano of Aristillus in particular was one of the first and best known. Lecouturier, the author of a very good map of the moon, gave a long description of it, and this description may be applied to the most of the lunar mountains. It is composed of a crater about twenty-four miles across, from the centre of which rise two cones, the highest of which attains nearly 984 yards; the whole is surrounded by a circular rampart.

When the bottom of the crater is examined with a powerful telescope, and under favorable circumstances, numerous rough portions are noticed which seem to indicate hardened lava and blocks of rock heaped together. From this mountain, taken as a centre, start five or six lines and rocky ramifications directed towards the east and south. These ramifications give rise to the radiation of Aristillus. They are surmounted by an enormous quantity of peaks or basaltic columns which rise from their summits, and make them resemble from afar the multitude of bell towers that are seen on some Gothic cathedrals. Aristillus presents the general aspect of most of the mountains of our satellite.

Thus the moon would appear very inhospitable to us. The sense of speech, like the sense of hearing, would be lost, and, consequently, would not exist. To the privation of these two senses, perhaps, must be added an inferiority in the pleasures which sight gives to us, seeing that wherever the eye would be directed, it would only meet with a scene of comparative desolation.

It is doubtless this proximity which has caused the great reputation of the lunar orb amongst us. No celestial body, except the sun, has ever had a similar influence. The whole world, it was supposed, was accessible to the lunar influences, men, animals, plants, minerals. The astrological opinions with regard to this body were most singular. We must quote some; they are really too curious to be passed over in silence. Let us choose one or two good astrologers, learned on the moon, and let us question them.

Curious Opinions.

Cornelius Agrippa, a famous geomancer, thus expresses himself: The moon is called Phœbe, Diana, Lucinus, Proserpine, Hecate, who governs the months, half-formed; who illuminates the nights, wandering, in silence, with two horns; queen of divinities, queen of heaven, who rules over all the elements, to whom respond the stars, to whom return the seasons, and whom the elements obey; at whose direction the thunders sound, the seeds germinate, the germs increase; the primordial mother of fruits, heart of Phœbus, shining and brilliant, carrying light from one planet to another, illuminating by her light

all the divinities, stopping various intercourses with the stars, distributing the light rendered uncertain on account of meetings with the sun; queen of beauty, mistress of shores and winds, giver of riches, nurse of men, governor of all states good and unhappy; protecting men by sea and land, moderating the reverses of fortune; dispensing with destiny, nourishing all which comes out of the earth, arresting the insults of phantoms, holding the cloisters of the earth closed, the heights of heaven luminous, the currents of the sea salutary, and ruling at will the deplorable silence of the lower regions, governing the world, treading Tartarus under foot; of whom the majesty causes the birds which fly in the sky, savage beasts in the mountains, the serpents hidden under the earth, and the fish in the sea, to tremble.

According to Eteilla, the moon governs comedians, butchers, tallow and wax chandlers, ropemakers, lemonade-vendors, publicans, playwrights of all kinds, masters of great works, menageries of animals; and, on the other hand, professional gamblers, spies, sharpers, cheats, bankrupts, false money-coiners, and mad-houses; that is to say, the moon rules over all those whose business it is to work during the night until sun-rising, or to sell provisions for the night; and it also rules over all which people would be ashamed to commit in full day, in sight of those who have manners. Thus each reader may easily find out what denomination he is and what it is that governs him.

Amazing Distances

SPACE has neither beginning nor end. The heavens are infinite space, indefinite expanse, a void without limits; no frontier circumscribes them, they have neither beginning nor end, neither top nor bottom, right or left; there is an infinity of spaces which succeed each other in every direction. The earth is a little material globe, placed in this space without support of any kind, like a bullet which sustains itself alone in the air, like the little captive balloons which rise and float in the atmosphere when the thin cord which retains them is broken.

A multitude of suns, surrounded like ours with a family of which they are the foci and the light-givers, float likewise in all parts of the expanse. These suns are the stars with which the fields of heaven are scattered. In spite of the appearance caused by perspective, immense spaces separate all these systems from ours, spaces so great that the highest figures of our great numeration can scarcely number the smallest amongst them. A distance that our figures can scarcely express also separates these stars from each other, extending from depths unto depths.

Notwithstanding these prodigious intervals, these suns are in number so considerable that their numeration as yet exceeds all our means; millions joined to millions are inadequate to enumerate the multitude! Let the mind try, if it is possible, to represent to itself at one time this considerable number of systems and the distances which separate them one from the other! Confused and soon humbled at the aspect of this infinite richness, it will only learn to admire in silence this indescribable wonder.

Heavens Piled on Heavens.

Continually rising on the other side of the heavens, going beyond the distant shores of this ocean without limits, it will endlessly discover fresh new space, and new worlds will reveal themselves to our eager gaze, heavens will succeed to heavens, spheres to spheres; after deserts of expanse will open other deserts, after immensities other immensities; and even when carried away without rest, during centuries, with the rapidity of thought, the soul would continue its flight beyond the most inaccessible limits that imagination could conceive,—there even the infinite of an unexplored expanse would remain still open before it; the infinite of space would oppose itself to the infinite of time; endlessly rivalling, without our ever being able to take away from the other: and the spirit will be arrested, overcome with fatigue, at the entrance of infinite creation as if it had not advanced a single step in space.

Ye stars! bright legions that, before all time,
Camped on yon plain of sapphire, what shall tell
Your burning myriads but the eye of Him
Who bade through heaven your golden chariots wheel?
Yet who, earth-born, can see your hosts, nor feel
Immortal impulses—eternity?
What wonder if the o'erwrought soul should reel
With its own weight of thought, and the wild eye
See fate within your tracks of deepest glory lie?

The immensity of the heavens has been sung on many lyres; but how can the song of man express such a reality? Poets have tried to render it in verse, when one feels the insufficiency of speech to note the immense thoughts which this wonderful contemplation develops in us.

Marvelous Flight Through Space.

We wish to open space before us and employ ourselves there, in trying to penetrate its depth. The velocity of a cannon-ball from the mouth of the cannon makes swift way, 437 yards per second. But this would be too slow for our journey through space, as our velocity would scarcely be 900 miles an hour. In nature there are movements incomparably more rapid, for instance, the velocity of light. This velocity is 186,000 miles per second. We will place ourselves on a ray of light and be carried away on its rapid course.

Taking the earth as our starting-point, we will go in a straight line to any point of the heavens. We start, and at the end of the first second, we have already traversed 186-000 miles; at the end of the second, 372,000 We continue: ten seconds, a minute, ten minutes have elapsed—111,600,000 miles have been passed. Flying away during an hour, a day, a week, without ever slackening our pace—during whole months, and even a year, the time which we have traversed is already so long that expressed in miles, the numbers exceed our faculty of comprehension, and indicate nothing to our mind; they would be trillions, and millions of millions.

But we will not interrupt our flight. Carried on without stopping by this same rapidity of 186,000 miles each second, let us penetrate the expanse in a straight line for whole years, fifty years, even a century—

where are we? For a long time we have gone beyond the last starry regions which are seen from the earth, the last that the telescope has visited; for a long time we travel in other regions, unknown and unexplored. No mind is capable of following the road passed over; thousands of millions joined to thousands of millions express nothing: at the sight of this prodigious expanse the imagination is arrested, humbled.

Well! this is the wonderful point of the problem: we have not advanced a single step in space. We are no nearer a limit than if we had remained in the same place; we should be able again to begin the same course, starting from the point where we are, and add to our voyage a voyage of the same extent; we should be able to join centuries on centuries in the same itinerary, with the same velocity,—to continue the voyage without end and without rest; we should be able to guide ourselves in any part of space, left, right, forwards, backwards, above, below, in every direction; and when after centuries employed in this giddy course, we should stop ourselves, fascinated or in despair before the immensity eternally open, eternally renewed, we should again understand that our flights had not measured for us the smallest part of space, and that we were not more advanced than at our starting point. In truth, it is the infinite which surrounds us, as we before expressed it, or the infinite number of worlds. We should be able to float for eternity without ever finding anything before us but an eternally open infinite.



CYCLONE OF SPIRAL NEBULA.

In the bosom of infinite space, the unfathomable extent of which we have tried to comprehend, float rich clusters of stars, each separated by immense intervals. These rich groupings of stars have received the name of nebulæ. This name was given at the time of the invention of astronomical lenses, when these starry tribes were distinguished only under a diffused, cloudy aspect, which did not enable the eye to distinguish the com-

posing stars. This appearance not revealing in any way the idea of solar clusters, it was thought that they were only phosphorescent vapors, whirlwinds of luminous substance, or possibly primitive fluids, whose progressive condensation would in the future effect the formation of new stars. The first nebula observed by the aid of the telescope and pointed out as an object of particular nature, the nebula of Andromeda, was considered for three centuries and a half as entirely deprived of stars.

Infinite Clusters of Stars.

Only a few years ago a Cambridge astronomer counted within the limits of this nebula 1500 little stars, notwithstanding which, the centre still keeps the aspect of a diffused light, in spite of the best instruments. Later, the astronomer Halley thought no more of the star-clusters.

Thus, infinite space must be represented as an immense void in the bosom of which are suspended archipelagoes of stars. These archipelagoes are themselves of infinite number; the stars which compose them can be counted by millions, and from one to the other the distance is incalculable. They are distributed in space in every direction, following every imaginable course, and invested with every possible form.

The fixed stars are in reality suns, many of them thousands of times larger than our little sun.

The existence of binary stars was discovered by Sir William Herschel toward the close of last century. It had long been noticed by astronomers as a remarkable coincidence that, in several instances, a pair of bright stars were found in close proximity to each other, much closer than we should have expected, supposing the stars to have been scattered up equally distant from all its four suns. A green and a red sun are above the horizon, and when we look directly at either, its color is clear, brilliant and well-defined. But their rays meet and mingle and unite into a dazzling snowy white, which imparts to the whole landscape the pure radiant look which seems to fill the firmament on a sunny day when the ground is covered with snow. A light cloud-wreath steals over the green sun, and a faint rosy blush overspreads the face of the sky. The cloud thickens, and the rosy hue deepens into a mellow crimson.

Then the green sun sets and a blue one rises, changing the red light of the sky into a rich purple, veined here and there with pale amethyst, as a few rays from the green sun struggle through the clouds just as it sinks beneath the horizon. The purple changes into a deep gold as the blue sun is succeeded by an orange one, and the gold pales down as the red sun sinks to his rest in turn. The orange is left alone, and when it, too, sets, night comes on apace.

All the Colors of the Rainbow.

And now the moons rise and shed their radiance on the scene. But how differently do they show from the pale uniform light that beams from our own plain satellite! Every color of the rainbow glows from their faces; in belts, in spots, in lunes, their checkered disks reflect every shade of hue that the artist's palette can produce.

The parts illumined by one sun alone reflect, more faintly than the rest, the colors of their respective orbs; those which come within the light of two or three of them will shine more brightly and with gayer combinations of colors; while in the parts on which all the four suns shine at once we find again the snowy white, so bright as to sparkle almost with the light of day.

But where there are four great lights to rule the day, night will be of unfrequent occurrence and of short duration; and soon the four suns, their noctural course ended, begin at once to draw nigh to their rising. Pale, slender threads of red, green, blue, and orange steal out from the darkness in four quarters of the horizon; and these widen and lengthen till they mingle together at their extremities in softly shading hues of white, indigo, and gold. Brighter and broader they grow, and the gorgeous variegated belt spreads rapidly from horizon to zenith, till at last the suns have fairly risen, and their many-colored rays combine again into the dazzling white of the perfect day.

Magnificent Constellations

REPRESENTATIVE maps were formed of the heavens by the ancients, and from the time of Hipparchus, the Greek astronomer, they were able to class the stars, distingushing them according to their brightness. The bright clusters are called constellations, and the ancient astronomers gave them, for the most part, the names of animals according to their supposed resemblance to some representative of the animal kingdom.

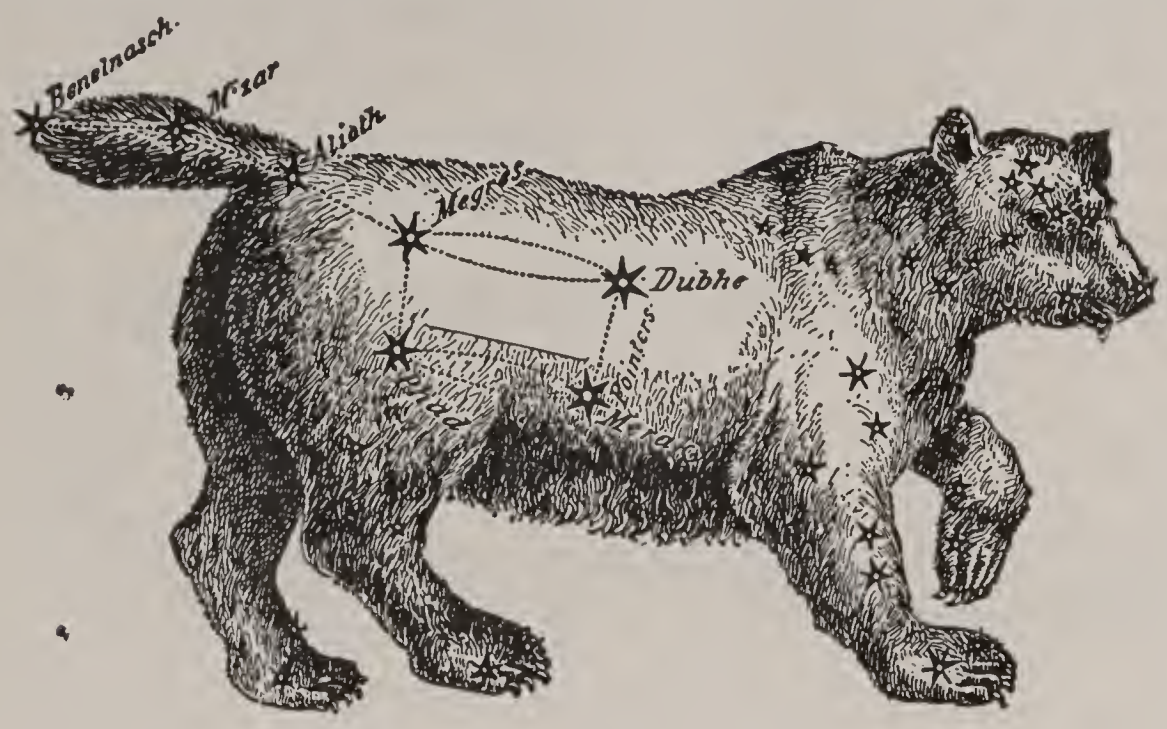
Let us form the geography of the heavens. The innumerable figures of animals, men or objects, with which the sphere is adorned, will not all be drawn here, seeing that they would only serve to confuse the mind with imaginary lines. Formerly they printed celestial atlases, where the figures were represented with exquisite care, so much so, indeed, that they ended by forgetting the stars, and the sky was nothing more than a menagerie. In spite of the interest of the images, we will not follow this example. At present, let us see how to direct our course for reading correctly the great book of the heavens.

THE GREAT BEAR.

There is one constellation known to everyone; for greater simplicity we will begin with it, as it will serve as a starting-point to go towards the others, and as a sign to find its companions. This constellation is the Great Bear, which has also been called David's Chariot, or Charles's Wain; which the ancients called *Septem triones* (whence came the word *septentrion*), or, again, *Helix*, *Plaustrum;* which the Greeks addressed under the name of *Arktos Megale;* which the Arabs called *Aldebb al Akbar*, and the Chinese, three thousand years ago, addressed as the *Tcheou-pey*, the god of the north. Thus it can boast of a high celebrity.

If, however, in spite of its universal notoriety, some have not yet had occasion to make its acquaintance, the following is the sign by which it may always be recognized.

Turn towards the north, that is to say, opposite the spot where the sun is at noon. Whatever may be the season of the year, the day of the month, or hour of the night, you will always see there a large constellation formed of seven stars, four of which are



URSA MAJOR, OR GREAT BEAR.

quadrilateral, and at a right angle with the side.

Have you not all seen it? It never sets. Night and day it watches above the northern horizon, turning slowly in four-and-twenty hours around a star of which we shall speak presently. In the figure of the Great Bear, the three stars of the extremity form the tail, and the quadrilateral forms the body. In the Chariot the four stars form the wheels, and the three the car. Above the second between these latter, good sights distinguish a very small star called Alcor, which is also called the Cavalier. The Arabs used it to test a good eye.

This constellation is also called the Big Dipper, from its supposed resemblance to a dipper. If a straight line be carried through the two stars on the side opposite the handle, a star less brilliant than the preceding ones is found, which forms the extremity of a figure like the Great Bear, but smaller and directed in a contrary direction. This is the Little Bear, or Little Chariot, also formed of seven stars. The star to which our line brings us, that which is at the extremity of the Bear's tail, or at the end of the shaft of the Chariot, is the Pole-Star. Always found in its place, it is an example of fidelity.

The Pole-Star has a certain renown, like all personages who distinguish themselves from others, because, among all the stars which twinkle in our starry nights, it remains immovable in the heavens. At any moment of the year, day or night, if you observe the sky, you will always find it occupying the same place. All the other stars, on the contrary, revolve round it every twenty-four hours, a hold for the centre of this immense whirlpool! The Pole-Star remains immovable over one pole of the world, whence it is used as a fixed point by navigators of the pathless ocean, as well as by travelers in an unexplored desert.



URSA MINOR.

CASSIOPEIA.

Looking at the Pole-Star, stationary in the midst of the northern region, we have the south behind us, the east to the right, the west to the left. All the stars revolving around the Pole-Star, from right to left,

ought to be recognized according to their mutual relations rather than according to the cardinal points. On the other side of the Pole-Star, relating to the Great Bear, is another constellation easily recognized. This is Cassiopeia, which is formed of five stars of the third magnitude, arranged somewhat like the slanting strokes of the letter M. This group takes every possible position, going round the pole; sometimes being above, sometimes below, sometimes to the left and sometimes to the right; but it is always easy to find, seeing that, like the preceding constellation, it never sets and is always opposite



TAURUS OR BULL.

to the Great Bear. The Pole-Star is the axle around which these two constellations revolve.

We go from west to east. We shall easily recognize the Bull by the group of the Pleiades which sparkle on its shoulder, by that of the Hyades which glimmer on its forehead, and by the magnificent star which marks its right eye, the star Aldebaran, of the first magnitude. It is, moreover, situated just above the splendid constellation of Orion.

The Pleiades, which are seen in the annexed engraving, are a group of about 80 stars, resolved by the telescope. The ancients counted in the Pleiades seven stars more brilliant than the ground sprinkled with golden dust. At the present time only six can be counted with the naked eye. Alcyone in Pleiades appears to be the central point of the universal heavens.



CASSIOPEIA.

This region, marked with Orion, Sirius, the Twins, the Goat, Aldebaran and the Pleiades, is ths most magnificent region of the celestial sphere. It is towards the end of Autumn that it shines in our hemisphere



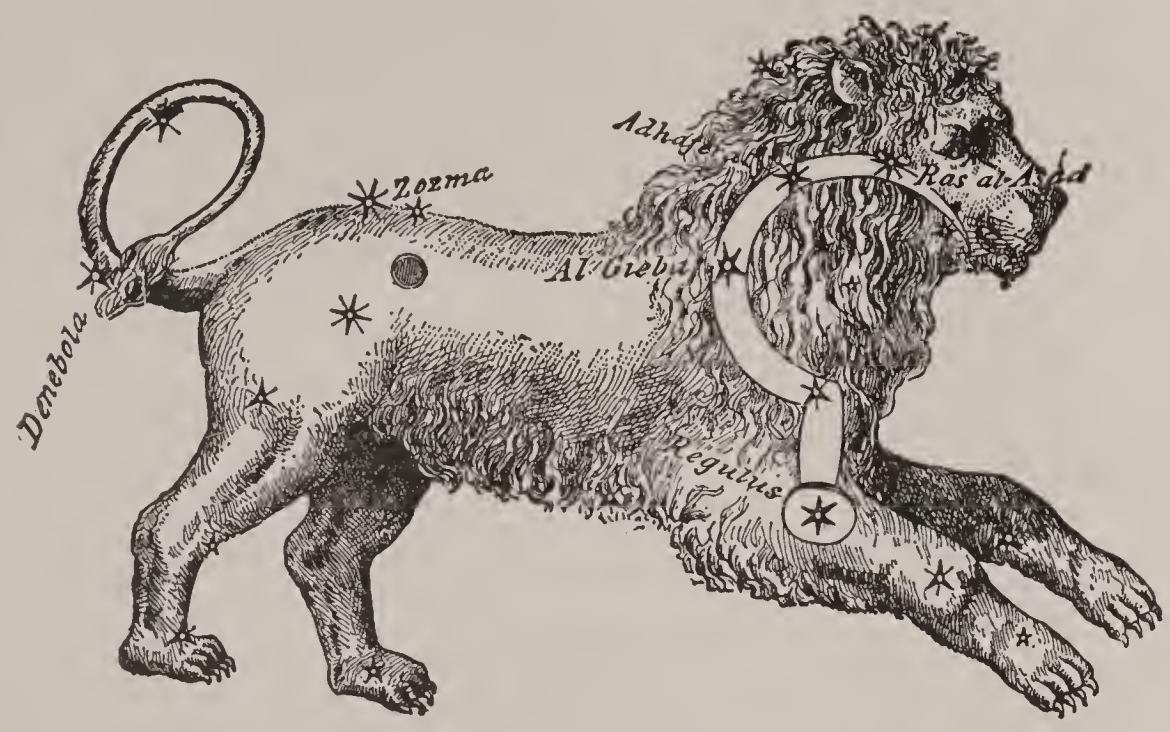
THE TWINS.

in the evening. The Twins are, in the fable, Castor and Pollux, sons of Jupiter, celebrated for their indissoluble friendship, for which they were rewarded by immortality. The Greeks also gave the name of Castor and Pollux to those lights which appear round

vessels after storms, electrical phenomena now called the fires of Saint Elmo.

The Crab or Cancer may be distinguished at the bottom of the line of Castor and Pollux, in five stars of the fourth or fifth magnitude. It is the least important body of the zodiac. While Hercules was fighting the Lion of Nemea, the Crab, aiding the vengeance of Juno, pinched the heel of the hero, who crushed it with his foot, but the queen of heaven gave it its reward by placing it in the heavens.

The Lion is a cluster of beautiful stars, situated to the east of the Twins. The most



LEO, OR THE LION.

brilliant of these stars is of the first magnitude, and is called Regulus, the heart of the Lion; the three others are of the second magnitude. The sun enters the Lion at the summer solstice, and causes it to disappear by covering it with his fires; this is the victory of Hercules over the Lion of Nemea. It was also for the same cause the symbol of strength and power. Being the abode of the sun during the month of July, it was again the sign of burning heats and of plagues which they sometimes brought with them. In the eyes of astrologers of the middle ages, this was its terrible aspect. The Virgin comes after the Lion.

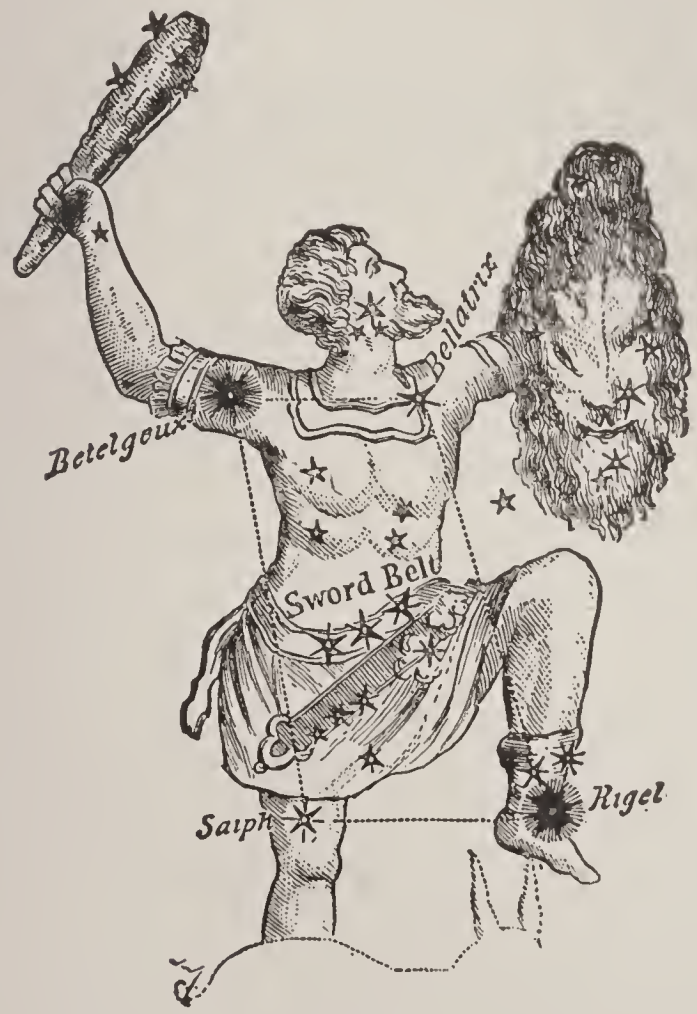
Copernicus (the He-goat) is not rich in bright stars. Those which sparkle on his forehead, are the only ones which can be distinguished by the naked eye. In some authors Copernicus represents the goat Amalthea, which nursed Jupiter on Mount Ida, and received a place in heaven as a reward. According to others, it represents the return of the sun to the winter solstice through the gates of the tropics. Again, according to others, it was a he-goat which was brought up with the king of the gods, and which discovered and sounded the marine trumpet, and produced fear among the Titans in their war with Olympus. The frightened gods hid themselves in the forms of different animals; Apollo changed into a crane, Mercury into an ibis, Diana into a cat. Such a metamorphose was never seen. Lastly, Pan into Capricornus, having a goat's body and the tail of a fish. He appeared, also, to wish to steal away with the giants who scaled heaven.

Aquarius forms with his three tertiary stars a very obtuse triangle. The base is prolonged in a string of stars from the side of Capricornus, and towards the left to the Urn. Thence begins a sinuous line of very small stars descending to the horizon. This is the water poured out by Aquarius. Aquarius appears to personify Ganymede, who was raised by Jupiter's eagle to serve as cup-bearer to the gods after the downfall of Hebe.

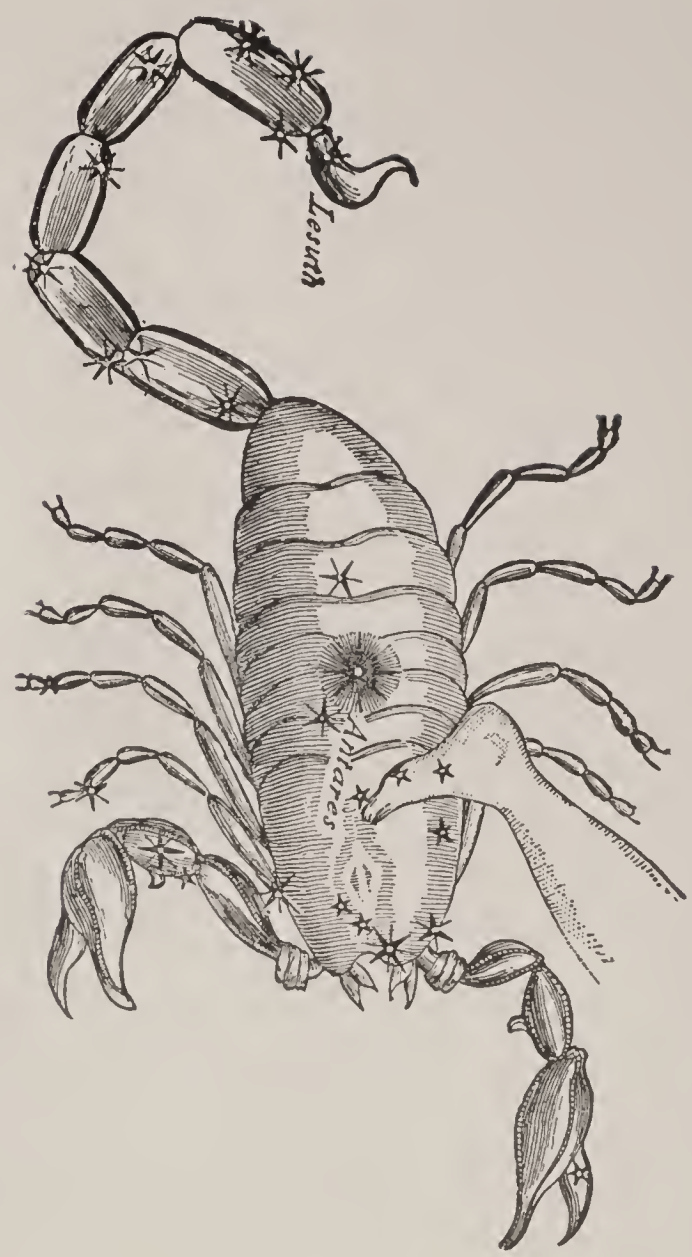
The Scorpion, with its heart marked by the brilliant Antares, a star of the first magnitude, is easily recognized. It is not that the form can be distinguished; for this form is not better sketched out by the stars which compose it, than the preceding figures have

been. But it is well understood that, when we speak of recognizing a constellation, we refer simply to the groups of stars which bear its name and not to its mythological figure. The Scales and Scorpion only formed one sign, with the Latins before Augustus: the Scales were then the claws of the Scorpion. As Augustus was born on the 23d of September, flattery leagued itself with astrology to celebrate the happiness promised to the earth by the birth of this emperor; the Scales, which the Egyptians had formerly instituted in the original sphere, were replaced in the heavens as a symbol of Justice.

The verses of the Eneid may now be easily interpreted. As a sign of misfortune and fear, the Scorpion was cursed among all the constellations. It was said, especially, that it had an invincible hatred towards Orion, because this figure sets when the former rises, and *vice versa*. It was not only the terror of the stars, but also the terror of the sun himself, that Ovid has described it to us.



ORION.



THE SCORPION.

ORION.

Among the southern constellations Orion is the most beautiful; we must not pass it without doing homage to it. It is during fine winter nights that this constellation shines over our heads. No other season is so magnificently constellated as the winter months. Whilst nature deprives us of certain enjoyments on the one hand, it presents us with others no less precious. The wonders of the heavens present themselves to us from the Bull and Orion at the east, as far as the Virgin and Boötes at the west; of eighteen stars of the first magnitude, which may be counted in the whole extent of the firmament, a dozen are visible at nine o'clock in the evening, not counting many beautiful stars of the second order and the remarkable nebulæ worthy of the attention of mortals.

Thus it is that nature establishes everywhere harmonious compensation and, whilst it darkens our short and frosty winter days, it gives us long nights enriched with the wealthiest creations of the heavens.

The constellation of Orion is not only the richest in bright stars, but it conceals also treasures for the initiated which no other can present. We might almost call it the California of the heavens. Let as speak first of its nebulæ, situated below the second star of the Belt.

This has been minutely examined and the different regions of its cluster have been studied and described in all their details. In proportion as the instruments have become more powerful, the stars, which constellate it, appear more numerous, which has happened in all telescopic observations of nebulæ; and, whilst in early days it was asked with great uncertainty if there was only a phosphorescent cloud, a vaporous mass—astronomers afterwards arrived at the conviction that it was formed of an immense number of heaped-up suns.

It occupies a large space in the sky, its apparent dimension being equal to that of the lunar disk. When we think of the distance which separates us from this agglomeration, we are dismayed at the real extent which it embraces in the midst of the boundless void and limitless expanses of the sky.

Strange Wanderers in Space

COMETS are tailed bodies that suddenly come to light up the heavens, and were long regarded with terror, like so many warning signs of divine wrath. Men have always thought themselves much more important than they really are in the universal order; they have had the vanity to pretend that the whole creation was made for them, whilst in reality the whole creation does not suspect their existence. The earth we inhabit is only one of the smallest worlds; and therefore it can scarcely be for it alone that all the wonders of the heavens, of which the immense majority remains hidden from it, were created.

The word comet is derived from a Greek word signifying hair, a title which had its origin in the hairy appearance often exhibited by the haze of luminous vapor, the presence of which is, at first sight, the most striking characteristic of eomets.

The chief point of difference between them and the planets is, that their orbits are very

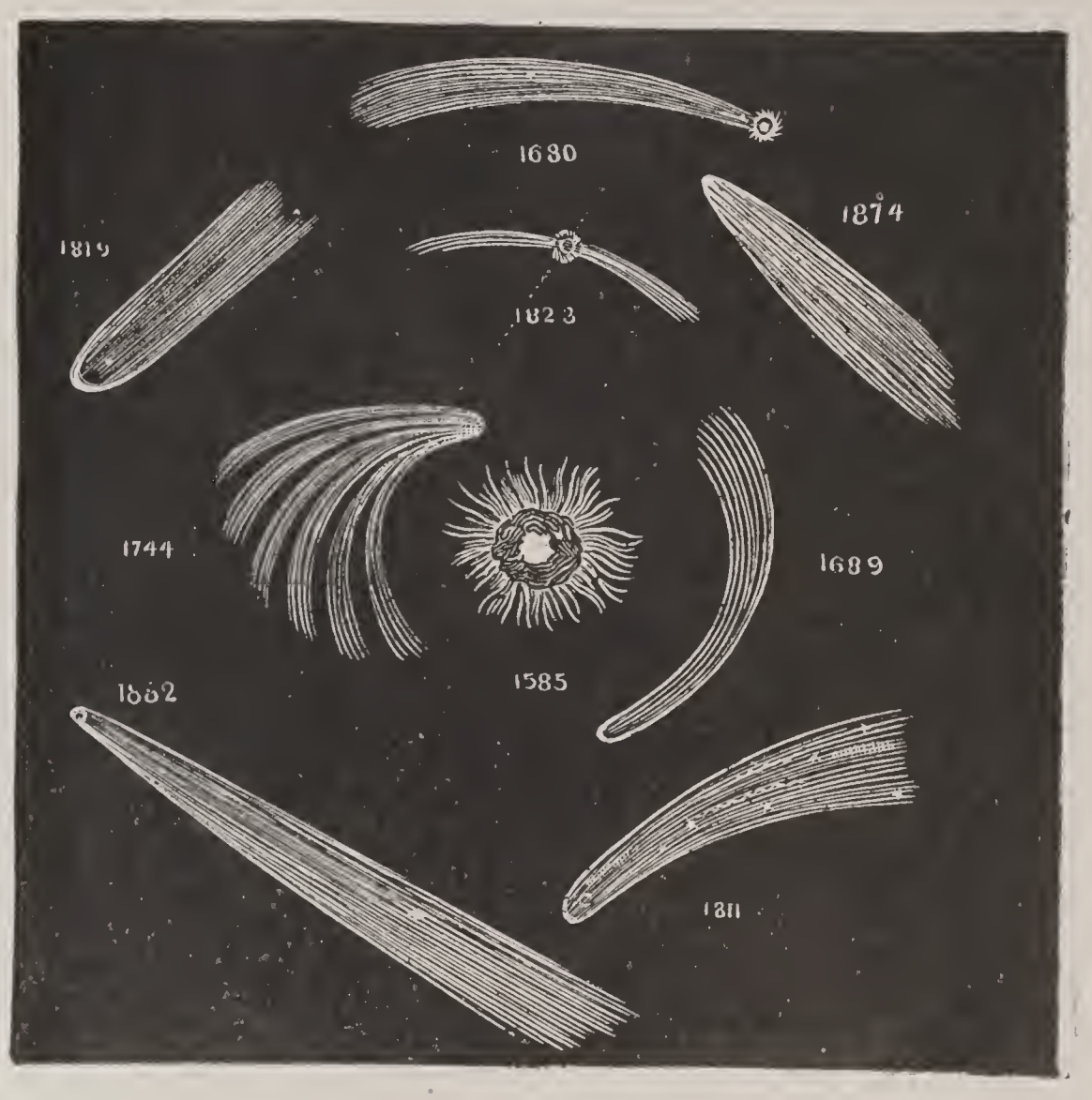
elongated; and, instead of being nearly circular, they take the elliptical form. In consequence of the nature of these orbits, the same comet may approach very near the sun, and afterwards travel from it to immense distances. Thus, the period of the comet of 1680 has been estimated at 3000 years. It approaches the sun, so as to be nearer to it than our moon is to us, whilst it recedes to a distance eight hundred and fifty-three times greater than the distance of the earth from the sun.

Great Velocity.

On the 17th of December, 1680, it was at its perihelion—that is, at its greatest proximity to the sun; it is now continuing its path beyond the Neptunian orbit. Its velocity varies according to its distance from the solar body. At its perihelion it travels thousands of leagues per minute; at its aphelion it does not pass over more than a few yards. Its proximity to the sun in its passage near that body caused Newton to think that it received a heat 28,000 times greater than that we experience at the summer solstice; and that this heat being 2000 times greater than that of red-hot iron, an iron globe of the same dimensions would be 50,000 years entirely losing its heat.

Two thousand years ago, Seneca wrote: A day will come when the course of these bodies will be known, and submitted to rules, like that of the planets. The prophecy of the philosopher is realized. It is now known that, like the planets, comits gravitate round the sun, and depend equally on its central attraction. Only, instead of moving in orbits, circular, or nearly so, they describe oval curves—very long ellipses. This is the great distinction established between them and planets. Instead of being opaque, heavy, and important bodies like our planets, they are of great lightness, and extreme tenuity.

But there are many comets which astronomers can prove will never again return to the neighborhood of the sun. They come from the remote depths of space, at a stupendous distance from the sun and all his train of planets; on beginning to feel the effect of his attraction they move towards our system, and at length they come sufficiently near to it to be visible through a telescope, and as surely as they do so, so surely are they detected by the keen eyes of some of the numerous astronomers who are always



VARIOUS FORMS OF COMETS WITH THE DATES OF THEIR APPEARANCE.

on the watch for these bodies. They come on nearer to the sun, till their pace exceeds that of the earth itself, but they do not plunge headlong into him.

Notwithstanding the vast powers of his attraction, they just whirl around the mighty luminary. Exposed to the fearful heat of his beams, the tail is developed to an enormous length. By some unknown law, which Professor Tyndall has recently sought to explain in a very ingenious manner, the tail stands out away from the sun as the comet whirls around it; then, after having passed the sun, the comet retreats again. It gradually becomes fainter, gradually is lost sight of by our telescopes, gradually plunges again into the depths of space, never again to revisit our sun, never again to be beheld by human eye. Such is the history of many of the great comets which at different times have struck terror into the inhabitants of the earth—they have retreated never more to return.



THE GREAT COMET OF 1843.

The great comet of 1843 was one of the most remarkable ever observed. The nucleus of this was so brilliant that it could be seen with the greatest ease in full daylight. This comet is remarkable for coming nearer to the sun than any other of these bodies whose paths have been determined with accuracy. It was found to approach the sun to within a distance of thirty-three thousand miles. It is easy to calculate, though not easy to imagine, what must be the heat in such a position. It would doubtless be many hundred times greater than the temperature of molten iron.

Strange Visitors.

The distinctive character of comets lies especially in the length of their course, and in the immense duration of their journeys round the sun, through the celestial regions. The following lines are by the poet Conder:

Mysterious visitant, whose beauteous light
Among the wondering stars so strangely gleams!
Like a proud banner in the train of night,
The emblazon'd flag of Diety it streams—
Infinity is written on thy beams;
And thought in vain would through the pathless sky,
Explore thy secret course. Thy circle seems
Too vast for Time to grasp. Oh, can that eye
Which numbers hosts like thee, this atom earth descry?

Meteorites are those solid fiery bodies which from time to time visit the earth, sweeping through the sky with immense velocity in every direction, and remaining visible but a few moments; they are generally attended by a luminous train, and during their progress explosions usually occur, followed by the fall of stones, to which the name of aërolites is given.

We must not confound the magnitude of the meteorite with that of the aërolite, for the latter is nothing more than a fragment thrown off from the former and falling to the earth, while the main body sweeps onward in its course. The diameter of the Weston meteorite was computed to be 300 feet, and that of a meteorite observed at Windsor, in August, 1783, was calculated to be no less than 3210 feet, or more than three-fifths of a mile.

Meteors or shooting stars may be occasionally seen on any clear night, but it is about the middle of August and November that the display is most brilliant. Sometimes meteoric showers of several hours' duration are witnessed. Meteors are supposed to be small bodies revolving around the sun, like the planets, in orbits which cross that of the earth. When the earth in its annual revolution arrives sufficiently near, under the influence of its attraction they approach it with great velocity, and on entering the atmosphere of the earth they take fire. In most cases they are consumed before reaching the earth, and thus disappear in the sky.

Sometimes, however, when the mass is large, a loud explosion takes place, and fragments from a few pounds to a ton in weight fall to the ground. In one case a meteoric stone nearly ten tons in weight was found in France. Such wanderers from far distant space or from other worlds are made up of materials similar to those we find in the earth—iron, nickel, quartz, talc, etc. These meteors, when large, are often inexpressibly brilliant. One seen at Hurworth, England, in 1854, lit up the heavens for half an hour with as bright a light as that of the sun, and finally burst with a thunderous explosion heard for many miles.



THE GREAT METEOR SEEN AT HURWORTH.

The periodical meteoric showers of August and November are caused by our orbit carrying us, at those periods of the year, right through great clusters of these aërolites. It has been estimated that not less than a hundred thousand million of them are annually



A SHOWER OF BRILLIANT METEORS ON THE OCEAN.

caught by our atmosphere; and when we consider the comparative smallness of the ring which we traverse, we can see that the absolute number of the meteorites belonging to our system must be something incomparably exceeding human calculation.

In the immediate neighborhood of the sun, where his attraction exercises the most direct and potent influence, they will be found in special abundance; and it is to the fact of their existence that we must look for an explanation of the corona, and perhaps of yet greater and more interesting mysteries of our system. The corona is simply the sunlight reflected from their surfaces, as it is from the disks of the moon and planets. For a vast distance round the sun the whole firmament is powdered with them as thick as hailstones, and the reflection from them produces a continuous luminous glow, lost indeed in the overpowering brightness of ordinary sunlight, but shining out with exquisite lustre when his direct beams are cut off from us.

Splendors of the Aurora

OF all optical phenomena, the aurora borealis, or the northern daybreak, is one of the most striking, especially in the regions where its full glory is revealed. It fires the sky above the horizon with shooting jets of flame.

What fills with dazzling beams the illumined air?
What wakes the flames that light the firmament?
The lightnings flash: there is bright splendor there,
And earth and heaven with fiery sheets are blent;
The winter's night now gleams with brighter, lovelier ray,
Than ever yet adorned the golden summer's day.

The appearances exhibited by the aurora are so various and wonderful. A cloud, or haze, is commonly seen in the northern region of the heavens, but often bearing towards the east or west, assuming the form of an arc, seldom attaining a greater altitude than forty degrees, but varying in extent from five to one hundred degrees. The upper edge of the cloud is luminous, sometimes brilliant and irregular. The lower part is frequently dark and thick, with the clear sky appearing between it and the horizon. Streams of light shoot up in columnar forms from the upper part of the cloud, now extending but a few degrees, then as far as the zenith, and even beyond it.

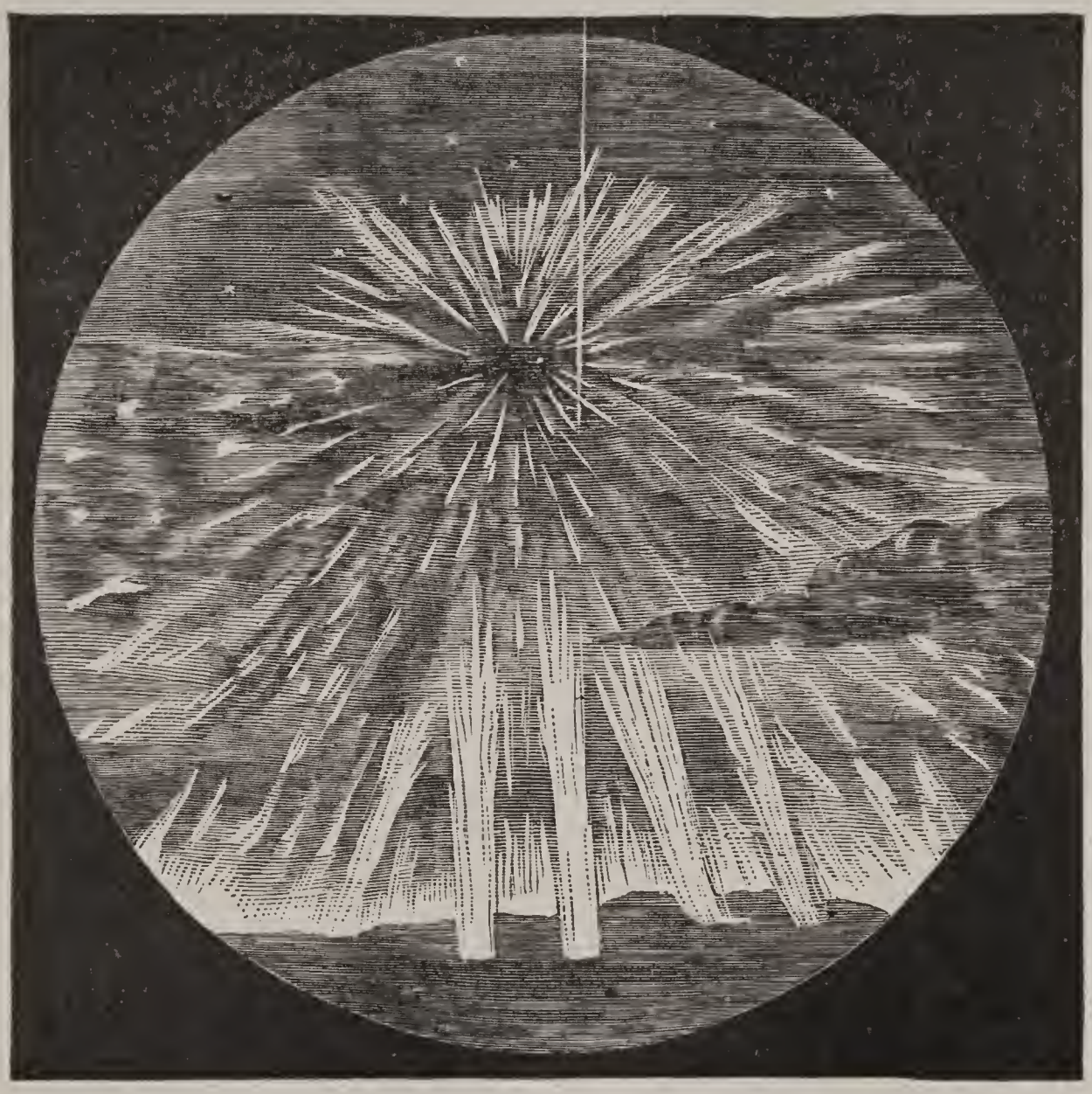
Instances occur in which the whole hemisphere is covered with these coruscations; but the brilliancy is the greatest, and the light the strongest, in the north, near the main body of the meteor. The streamers have in general a tremulous motion, and when close together present the appearance of waves, or sheets of light, following each other in rapid succession. But no rule obtains with reference to these streaks, which have acquired the name of "the merry dancers," from their volatility, becoming more quick in their motions in stormy weather, as if sympathizing with the wildness of the blast. Such is the extraordinary aspect they present, that it is not surprising the rude Indians should gaze upon them as the spirits of their fathers roaming through the land of souls. They are variously white, pale red, or of a deep blood color, and sometimes the appearance of the whole rainbow as to hue is presented.

Vivid Illumination.

When several streamers emerging from different points unite at the zenith, a small and dense meteor is formed, which seems to burn with greater violence than the separate parts, and glows with a green, blue, or purple light. The display is over sometimes in a few minutes, or continues for hours, or through the whole night, and appears for several nights in succession. Captain Beechey remarked a sudden illumination to occur at

one extremity of the auroral arch, the light passing along the belt with a tremulous, hesitating movement towards the opposite end, exhibiting the colors of the rainbow; and as an illustration of this appearance, he refers to that presented by the rays of some molluscous animals in motion.

Captain Parry notices the same effect as a common one with the aurora, and compares it, as far as its motion is concerned, to a person holding a long ribbon by one end, and giving it an undulatory movement through its whole length, though its general position remains the same. Captain Sabine likewise speaks of the arch being bent into convolutions, resembling those of a snake in motion. Both Parry, Franklin and Beechey agree that no streamers were ever noticed shooting downwards from the arch.



AURORAL FLAMES IN THE NORTHERN SKY.

The preceding statement refers to aurora in high northern latitudes, where the full magnificence of the phenomenon is displayed. It forms a fine compensation for the long and dreary night to which these regions are subject, the gay and varying aspect of the heavens contrasting refreshingly with the repelling and monotonous appearance of the earth. We have already stated that the direction in which the aurora generally makes its first appearance, or the quarter in which the arch formed by this meteor is usually seen, is to the northward.

Effulgent Arch.

But this does not hold good of very high latitudes, for by the expeditions which have wintered in the ice, it was almost always seen to the southward; while, by Captain Beechey, in the "Blossom," in Kotzerne Sound, two hundred and fifty miles to the southward of the ice, it was always observed in a northern direction.

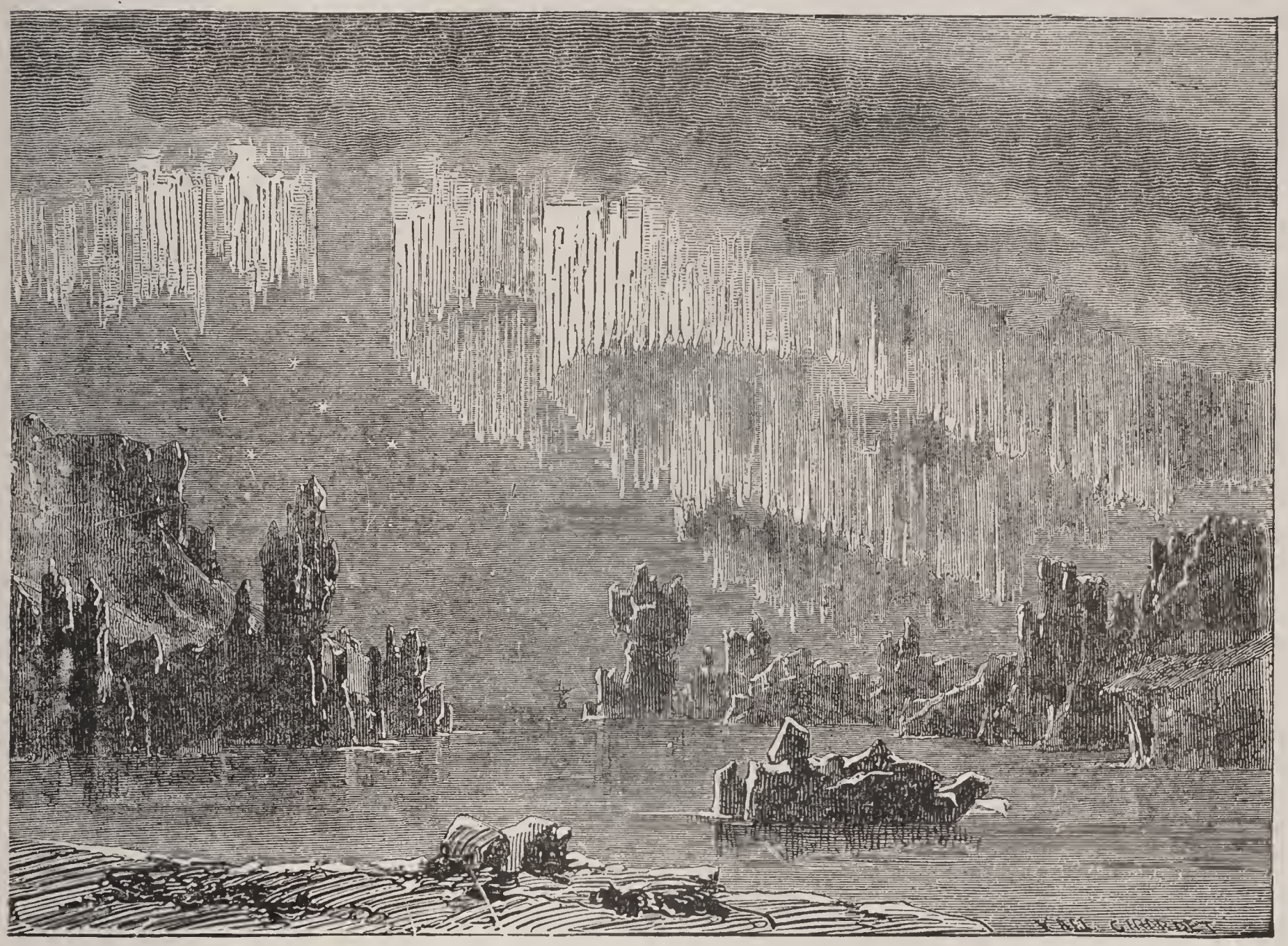
Dalton has furnished the following account of an aurora, as observed by him: Attention was first excited by a remarkably red appearance of the clouds to the south, which afforded sufficient light to read by at eight o'clock in the evening, though there was no moon nor light in the north. From half-past nine to ten there was a large, luminous, horizontal arch to the southward, and several faint concentric arches northward. It was particularly noticed that all the arches seemed

exactly bisected by the plain of the magnetic meridian.

At half-past ten o'clock streamers appeared, very low in the southeast, running to and fro from west to east. They increased in number, and began to approach the zenith, apparently with an accelerated velocity, when all on a sudden the whole hemisphere was covered with them, and exhibited such an appearance as surpasses all description.

The intensity of the light, and prodigious number and volatility of the beams, the grand intermixture of all the prismatic colors in their utmost splendor, variegating the glowing canopy with the most luxuriant and enchanting scenery, afforded an awful, but at the same time the most pleasing and sublime spectacle in nature. Every one gazed with astonishment, but the uncommon grandeur of the scene only lasted one minute. The variety of colors disappeared, and the beams lost their lateral motion, and were converted into the flashing radiations.

The great distinction between the polar countries and the other regions of the globe, is their long day and long night. Describing an immense spiral around the horizon, the sun gradually mounts to the highest point of his course; then, in the same manner, it returns towards the horizon, and bids farewell to the earth, slowly dying away in a gloomy and ghastly twilight. And, for six months, the Arctic wildernesses knew it not.



BRILLIANT AURORA BOREALIS IN THE ARCTIC SEAS.

When the navigator, says Captain Parry, finds himself buried for the first time in the silent shadows of the polar night, he cannot

conquer an involuntary emotion of dread; he feels transported out of the sphere of ordinary existence. These deadly and sombre deserts seem like those uncreated voids which Milton has placed between the realms of life and death. The very animals are affected by the melancholy which veils the face of nature. Under the influence of the almost perpetual gloominess Dr. Kane's Newfoundland dogs went mad, and died.

Dazzling Radiance.

But if the sun for six months of the year deprives the circumpolar countries of the splendor of its fires, an imposing phenomenon frequently illuminates the long nights with dazzling radiance, as if nature sought to compensate for the absence of the orb of day by the most impressive of all her optical wonders. The polar nights are nearly always lighted up by the gorgeous lustre of the aurora; called borealis or australis, according to the poles at which it is produced. Shafts and rays of light shoot upwards to the zenith. These luminous sheaves pass through all the colors of the rainbow; from violet and sapphire to green and purple-red.

Sometimes the columns of light issue from the resplendent arch mixed with blackish rays; sometimes they rise simultaneously at different points of the horizon, and unite to form a sea of flame pervaded by rapid undulations. On other occasions, fiery dazzling standards are unfurled to float lightly in the air. A kind of canopy of soft and tranquil light, which is known as the corona, announces the close of the phenomenon. Thereupon the luminous shafts begin to wane in splendor, the richly colored arcs dissolve, die out, and soon of all the magnificent spectacle nothing remains but a whitish cloudy haze.

The arch of the aurora is only part of a ring of light, which is elevated considerably above the surface of our globe, and whose centre is situated in the vicinity of the pole. It is easy, then, to account for the different aspects it presents to observers placed at different angles to it. A person some degrees south of the ring would necessarily see only a very small arc of it towards the north, from the interposition of the earth between him and the observer; if he stood nearer the north, the arc would appear larger and higher; if immediately below it, he would see it apparently traversing the zenith; or if within the ring, and still further north, he would suppose it to culminate in the south. It is supposed that the centre of the ring corresponds with the magnetic north point, in the island of Boothia Felix.

Magnetic Needle Affected.

The phenomenon generally lasts several hours, and is frequently diversified by peculiar features; so that sometimes it seems to present the hemispherical segment of a gigantic wheel; sometimes it waves and droops like a rich tapestry of colored light, in a thousand prismatic folds; and, at other times, it may be compared to a succession of resplendent banners, or streamers, waving in the dark and intense sky.

The arch varies in elevation, but is seldom found more than ninety miles above the terrestrial surface. Its diameter must be enormous, for it has been known to extend from Italy to the polar regions, and has been simultaneously visible in Sardinia, Connecticut, and New Orleans.

Of the magneto-electric origin of the aurora no doubt can be entertained. When it occurs, the magnetic needle is invariably affected, the very noticeable perturbation being greatest at the climax of the auroral brilliancy.

ELECTRICITY

Latest Discoveries

IN late years the science of electricity has made strides so rapid as to surprise even those who are constantly looking for wonders in scientific discovery. The achievement of Ben Franklin in drawing lightning from the clouds with his kite has been surpassed a thousand fold. The triumphs of Edison, Bell and others read almost like miracles, and whereas it was once supposed that electricity was little else than a destructive force, it has now been caught, tamed, harnessed and made to work for the good of man.

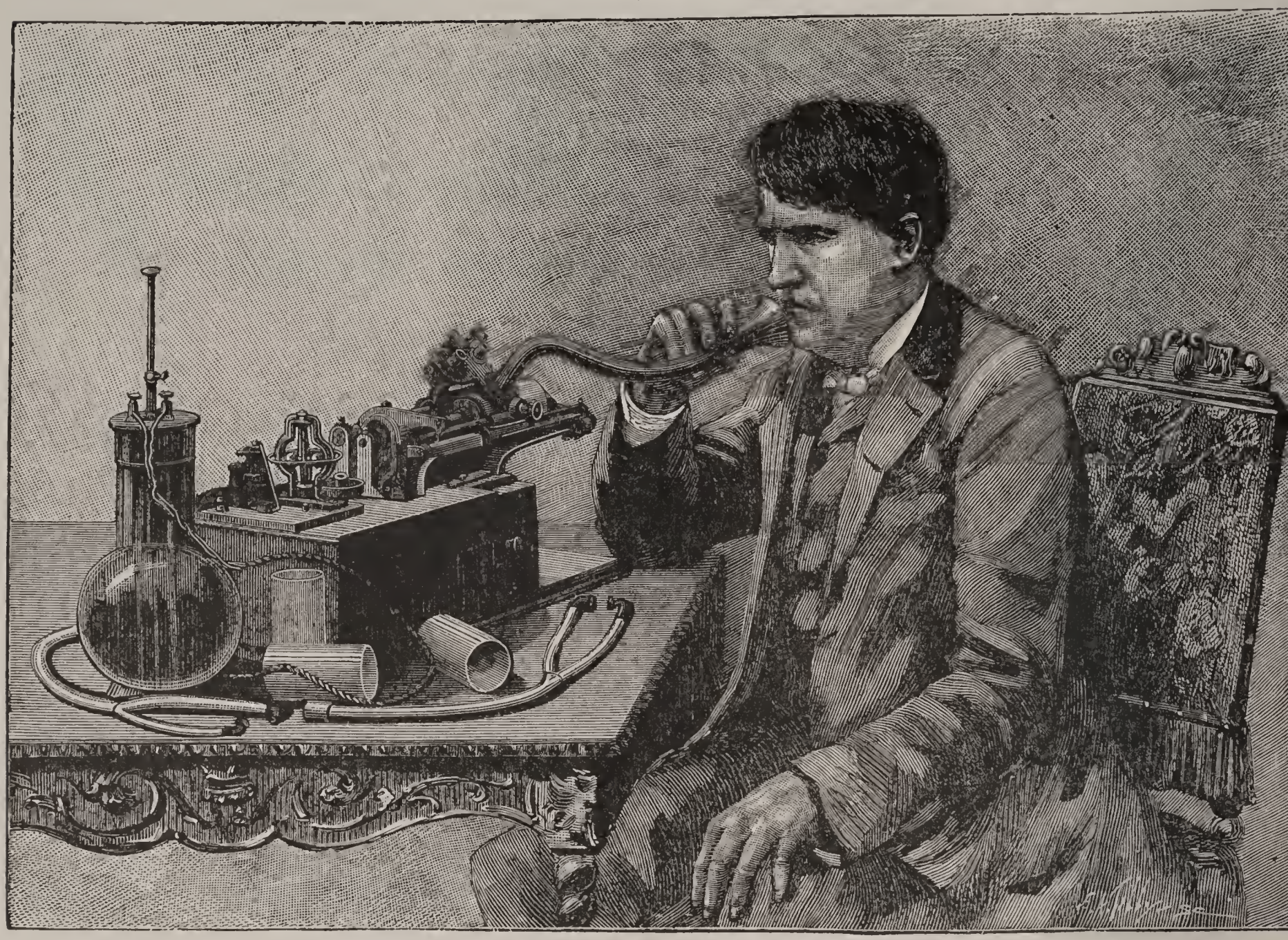
The electric light, illuminating the streets of every city; the telephone, repeating what you say here at a point miles distant; the phonograph, speaking, singing, reproducing sounds of every description; the kinetoscope, exhibiting the motions of actual life; the megaphone, sounding its trumpet blast far beyond the natural reach of the human voice; the application of the mysterious force of electricity to the uses of ordinary travel, such as street cars, and even railways hitherto operated by steam—these are only a few of the wonderful inventions and applications of the subtle agent which has suddenly leaped from the clouds and seems to be almost transforming the face of the earth.

If a stick of sealing-wax is rubbed vigorously with a woolen cloth, it will be found capable of attracting small shreds of paper. This is the simplest experiment in electricity. Many other substances, such as resin, vulcanite, glass, etc., can be made to show the same phenomenon. To obtain the best effect with any given substance a particular rubber must be chosen. For example, a cat's fur, slightly warmed, is every efficient in electrifying vulcanite or resin, while silk, amongst simple substances should be used to excite glass.

A Powerful Agent.

Thus, in a simple manner, we discover in nature the existence of an invisible force. Its power may be said to be unlimited. It can shatter the stateliest granite column. It can rive in twain the brawniest oak. It can destroy instantly every form of animal life. Not until within a comparatively recent period has this force been mastered and made to work out beneficent results.

In a general way it may be said that in using electricity it is produced by friction, and stored as water might be in a tank and then the force is turned on when the power is required. All else relates to the construction of the necessary apparatus.



MR. EDISON TALKING INTO THE PHONOGRAPH.

The Phonograph

VERY few even of those who have heard the dulcet strains of some sweet song from the depths of the phonograph, understand in the least the mechanism by which the sounds are produced. The explanation is as follows: The phonograph is composed of a metal cylinder covered with a thin layer of wax, on which a pointed pen inscribes tracings, corresponding to the vibrations caught by a membrane placed on top of the pen.

The wax-coated cylinder is rapidly revolved by means of an electric battery, and as one speaks in front of the membrane, the cylinder advances slowly in a horizontal position, at the same time revolving rapidly.

The membrane vibrates much or little, according to the sounds emitted by the operator. The pen moves according to the vibrations, and peculiar, almost imperceptible tracings on the wax are the result. On top of the membrane is a funnel into which the operator speaks. The picture shows Mr. Edison talking into this funnel.

To obtain reproductions of the sounds as inscribed on the wax cylinder, it is replaced in its original position. Another pen of different construction than the first is put into play, and in a most exact and delicate manner transfers to the wax of another cylinder the tracings on the first. The funnel is replaced by a rubber tube having two, four or six branches, according to the number of the auditors, and the tubes are applied to their ears, as in the illustration.



LISTENING TO SOUNDS FROM THE PHONOGRAPH.

Not only can we hear the sounds from the same phonograph into which they are spoken, but the cylinders may be preserved and taken wherever we wish; by placing them again in a mechanism as above described, the original sounds may be reproduced.

In this manner are made the phonographs found in many hotels and public places. The first cylinder is carefully made as above described, and duplicated as many times as required. Each cylinder is then placed in a case, and the phonograph may be put in use when required.

The new and perfected Edison phonograph has already gone into very general use and many thousands are distributed in American business offices, where they facilitate correspondence in a variety of ways. They are also employed by stenographers as a help in the transcription of their shorthand notes. Heretofore these notes have been slowly dictated to amanuenses, but they are now frequently read off to a phonograph and then written out at leisure. The phonograph is, however, being used for direct stenographic work and it reported verbatim forty thousand

words of discussion at one presidential convention, the words being quietly repeated into the machine by the reporter as quickly as they were uttered by the various speakers. A large number of machines are in use by actors, clergymen, musicians, reciters and others, to improve their elocution and singing. It is also worthy of note that voice records remain of distinguished men, who "being dead, yet speak."

Why the Wheels Go Round

FEW people understand the principle upon which street cars are propelled by what is known as the Trolley system. Most people know that a power-house, a trolley wire and a motor are necessary to the system, but of the functions of the various parts they have but a faint conception. "What makes the wheels go round" is a mystery, yet it can be easily explained.

First, there are boilers to generate steam for the engines, and the engines in turn drive the generators, which produce the mysterious power or "juice," as it is commonly called by the electricians, for the motors in the cars. It is obvious, therefore, that the prime factor in the operation of an electric railway is steam, the electric current acting only as a convenient and subtle agent for transmitting and distributing the power.

The voltage of an electric circuit corresponds to the pressure in water pipes. The voltage of a dynamo depends on three conditions, namely, the speed of revolution of the armature, the number of coils of wire in the armature, and the strength of the magnetic field. For incandescent lighting, 110 volts are generally used, while for railways the pressure is 500 volts.

The current from the generator in the power-house goes to the switchboard, where it passes through an ammeter, which indicates the amount of current being given out, through a switch, by means of which the current may be shut off at will, and through a circuit-breaker, which opens the circuit automatically in case of a short circuit on the line or an overload.

From this point one side of the circuit is composed of the feeder (heavy insulated copper cables) and the other side of the ground or return. Formerly the rails alone connected with the ground formed the return, but owing to various causes, among them the electrolytic action on water and gas pipes, the modern practice is to supplement the rails with heavy copper wires, which afford an easier path for the current than the pipes. The feeders run parallel with the tracks, either overhead or underground, as the case may be, and at points along the line are "tapped" or connected to the trolley wire.

How the Current is Applied.

Each car is provided with two motors, the armatures or revolving parts of which are connected to the axles of the cars. A motor is made almost exactly like a generator. In fact, if driven by an engine, it will generate an electric current the same as the generator. Therefore, when the power of the engine drives the armature of the generator in the power house, causing it to give out a current, this current supplied to the motor causes its armature to revolve and develop the same mechanical power originally required to drive the generator, eliminating, of

course, the various losses due to friction and leakage.

Next the current goes through the motor. While delivering a lecture before an audience of unskilled laymen, a well-known electrical engineer was asked how the current gets into the car, and he replied: "The conductor brings it in." Of course he meant the copper conductor running down the trolley pole, and not the innocent fare-taker and bell-ringer.

Practical Illustration.

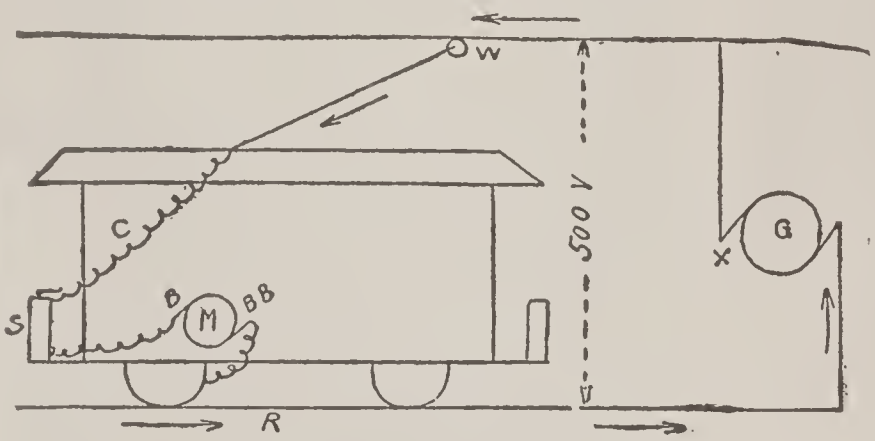
The method of allowing the current to pass through the motor in the car is illustrated in the annexed sketch. The top line is the trolley wire and R shows the rails. Between these there is maintained a pressure of 500 volts. W is the trolley wheel in contact with the trolley wire, and attached to the trolley pole. In electrical contact with the trolley wheel and running through the trolley pole is an insulated copper wire C. This wire is shown in the sketch, but is, of course, concealed in the car. It runs to the familiar metal case on the platform. This case contains the controller, which consists of a system of coils of wire, resistance arranged so that the speed of the motors may be varied by the motorman by turning the switch or controller handle to different points.

The controller is also so constructed that by turning another handle the motor will revolve in the opposite direction, backing the car. The coils are so arranged that the two motors may be thrown in parallel or in series, which means in the first case that each motor completes a circuit by itself, while in the second case the same current flows through both motors. Only one motor is shown in the sketch, which is sufficient to illustrate the principle.

The direction of flow is shown by the arrow heads. The current from the generator G in the power house flows to the feeders and trolley wire. From the trolley wire it flows through the trolley wheel W, through the wire C in trolley pole to the controller S, where it is turned on or off by means of the controller handle. From here it flows through another wire to the brush B of the motor M, through the armature of the motor and out at the brush B B, then through a wire into the car wheel to the rail R, which carries the current back to the negative brush of the generator G.

Great Motive Power.

The flashing often seen at the wheels of an electric car is caused by imperfect contact between the wheel and rail, and is due often to dust on the rail or similar causes.



Already the electric current has been applied to ordinary railroad traffic. The most advanced thought on this subject points to the time not far distant when electricity will be the great motive power superseding steam. Its advantages are evident at a glance. The speed which it is capable of furnishing, the absence of annoying smoke, the facility with which it can be operated, all indicate that its practical results will be of great service, will form an epoch in scientific discovery and constitute a new mode of carrying on those great industries which are dependent upon a motive power, at once efficient and easily manipulated.

Successful efforts have been made to place the conducting wires in the earth, thus avoiding the danger of having them over head. The advantage of this is apparent, and being accomplished, we shall have the most complete motive power ever brought into use.

The achievements thus far in electrical science are among the greatest triumphs of the age. These have come rapidly and in vivid succession. The most acute thought and inventive genius have been displayed in the practical application of this greatest and most marvelous of all the agents treasured in the storehouse of nature.

The Telephone

SUPPOSE you want to communicate with your neighbor across the street: a wire is stretched between the two houses and connected to the two telephones; from the remaining binding screw of each telephone wires are conducted, say, to the gas-pipe, and the *bare* wire wound round the *bare* pipe, so that there may be metallic contact. Conversation may now be carried on as in the annexed figure. For short distances you will perhaps find least difficulty by using a double wire instead of connecting to the brass pipe, as the joints of the latter sometimes intercept altogether the flow of electricity.



COMMUNICATING BY TELEPHONE.

Philosophy of the Telephone.

We already know that when sound-waves impinge on anything like the ferrotype plate of a telephone, such a plate is made to vibrate; and a piece of iron like this vibrating in the neighborhood of a magnet will considerably disturb its lines of force. If these fluctuating lines of force, therefore, are crossed by rings of wire, currents of electricity will be generated in the wire.

And so it is every time one speaks into a telephone, for electricity is generated and sent along the wire to the other end, in a direction which varies with the "in-and-out" action of the telephone plate.

You will clearly see, then, that electricity is produced at the *transmitting* end. What happens where the listener has his attentive ear to the telephone? The electricity travels round the coil of the *receiving* telephone, and varies the magnetism of the bar within it, which in its turn varies its attraction upon the ferrotype plate; the ferrotype plate begins to vibrate, and it vibrates in such a way as to reproduce the sounds which were spoken into the transmitting end.

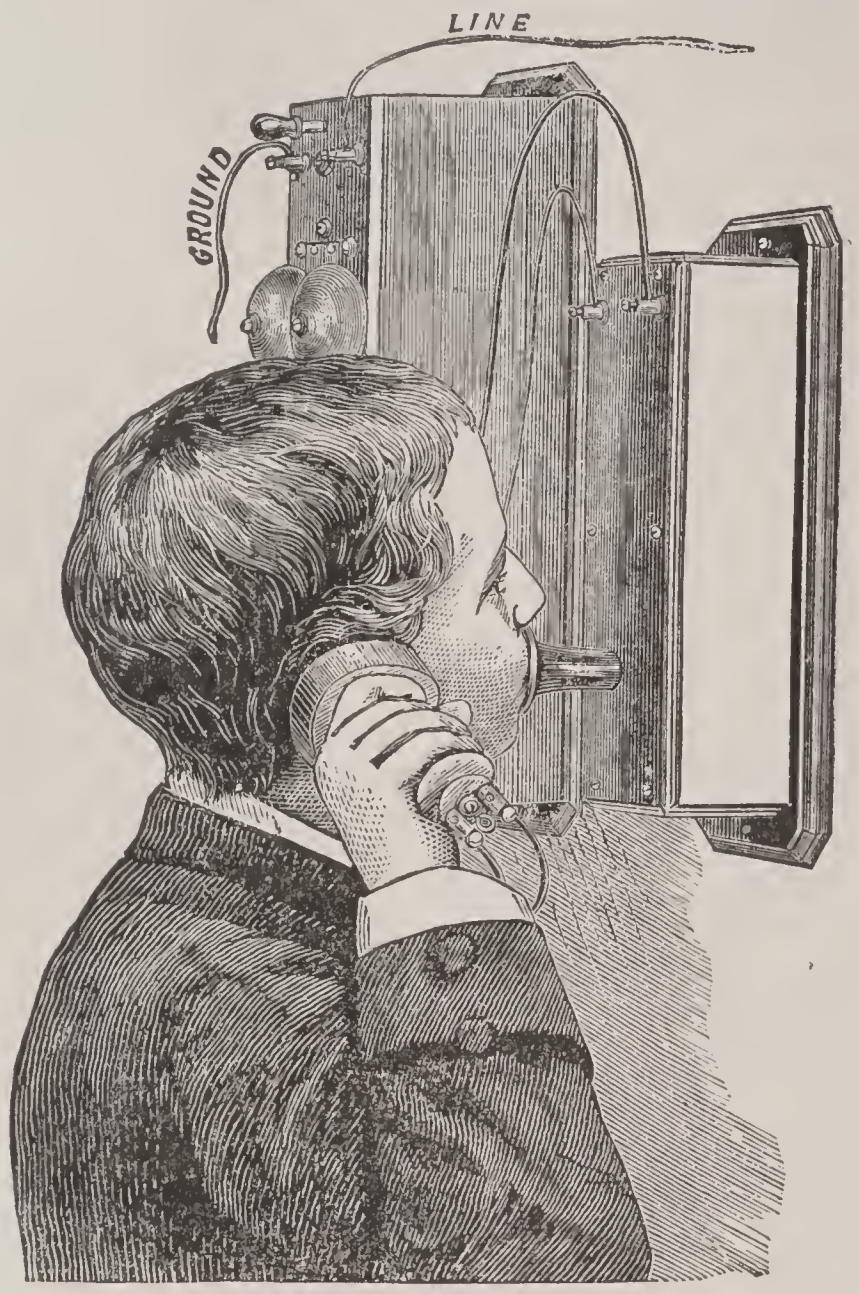
Transmission of Sound.

That we should ever be able to "talk by lightning" was not dreamed of for many years after the discovery of the telegraph proved that messages could be transmitted through motions of the electric instrument producing signs. Now we do not have to write the communication, but can speak to a person many miles away, and converse almost as freely as we would with one by our side in the same room.

The principle is that of the transmission of sound. The air, the water, woods, metals are all conductors, but it has been proved that a metallic conductor, a telegraphic wire, with electricity for the driving force, is the best transmitter ever discovered. The telephone has rapidly sprung into use, and has become a necessity in our large towns, where, on account of the pressure of business, time is money and moments count for as much as hours did once. A man of business can call up his neighbor, who is near or his customer miles away, and in a brief time the matter in hand is disposed of.

The description of the instrument is as follows: An electro-magnet or spool of copper wire is fastened to the end of a steel bar which has been charged with magnetism; the ends of the wire are carried down to the outer part of the rubber case, and connected by screws to the line wire.

In front of the spool, and a little way from the end of the bar magnet, a piece of "ferrotype" sheet iron is placed. When a

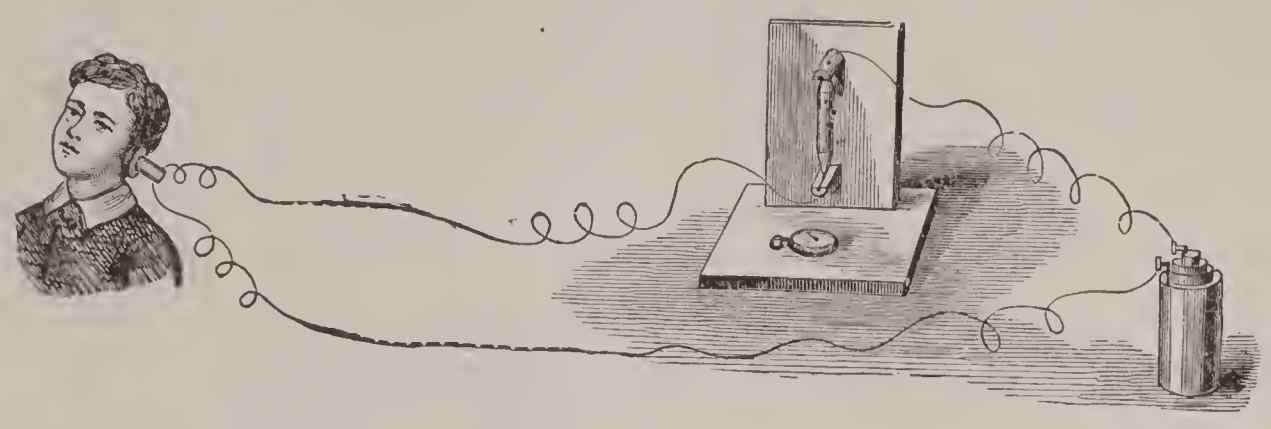


THE BELL TELEPHONE.

current of electricity is sent into the telephone and through the spool of wire, thn sheet iron plate is caused to vibrate in unisoe with the breaking of the current, by reason of the alternate attractions and cessations of attraction of the plate by the electro-magnet, and a sound is produced, as already explained.

The microphone is an instrument for intensifying and making audible very feeble

sounds. It produces its effects by the changes of intensity in an electric current, occasioned by variations in the contact resistance of conducting bodies. It has always been known that many solids are excellent conductors of sound. One of the little experiments of boyhood is for one lad to hold his head under water while another, not far away, strikes two stones together under the surface. The water coming in close contact with the ear, and being a good conductor of sound, produces something in the nature of a shock, quite as startling as would be the firing of a pistol near one's head. This, it must be understood, is not the principle of the microphone or telephone. There must be a conductor for the electric current, but the current itself is indispensable.



THE MICROPHONE.

Thus, not only by the telegraph can words be transmitted, but also in a more direct way, and even the tones of the human voice can be distinguished. It is literally true that we talk by lightning, and can speak to a listener a thousand miles away. Our age finds in electricity its most marvelous field of discovery.

The Electric Light

THE problem, long-studied by scientists, of procuring from this subtle force in nature a light that would be of service and outstrip all other means of illumination has been solved, and in every town now, of any dimensions, electric lighting is in successful operation.

Pure incandescence is represented by four systems—Edison, Maxim, Swan and Lane Fox. The light from this description of lamp is from the heating of a carbon filament due to its high resistance to the passage of the current. This filament is surrounded by a hermetically sealed glass bulb from which all the air has been extracted.

The life of the lamp depends greatly as to how carefully this process has been carried on. It is not sufficient only to extract the air when the lamp is cold, but the process must be carried on when the lamp is burning, and the exhaustion must be continuous for some time. These lamps can be worked either by an alternating or a continuous current machine; and, unlike those of partial incandescence, require a tension current, while the former work best with a quantity one.

The Edison lamp is generally considered to be the pioneer of this system of illumination. Whether this be so or not the name of the inventor has been for a considerable time associated with lighting by incandescence, although his early experiments were with a lamp containing a metallic substance. The lamp consists of a blown glass globe containing a very fine filament made from the fibre of bamboo carbonized. The length is fixed according to the resistance required.

Each end of the filament is nipped between a miniature vise composed of platinum

connected with the terminals of the lamp. These are fixed in an insulated socket, which also holds the glass bulb. The socket is furnished with a screw which fits into a projection on the bracket or holder, so that the act of screwing in the lamp makes the necessary connection with the conducting wires.

By turning a tap the lamp can be removed without interrupting the passage of the current. The maximum duration of the lamp is stated to be twelve hundred hours. The chief feature of the Edison system is the manner in which the inventor distributes the current from a main generator of his own design, which is always used with this system of lighting.



THE VOLTAIC ARC.

The engraving on next page is a perfect representation of Edison's latest electric lamp, with its various parts shown in detail. Fig. 1 shows the carbon horseshoe ready for use, full size; Fig. 2 represents the horseshoe when just cut from the Bristol board, illustrating, by its comparison with Fig. 1, the enormous shrinkage it undergoes during the process of carbonization.

The only index to the completion of this process is the crackling of the oxide formed on the exterior of the iron boxes in which the horseshoes are placed. After their removal from the boxes the carbons are placed between the jaws of small platinum vises, *a*, *a*, supported on thin platinum wires blown in the glass base and forming the electrodes. The resistance of the slender horseshoe is one hundred ohms.; and while the lamp shown, Fig. 3, is intended to give a light equivalent to a single four-foot gas jet, it may be forced to give a light equal to eight or ten of such jets.

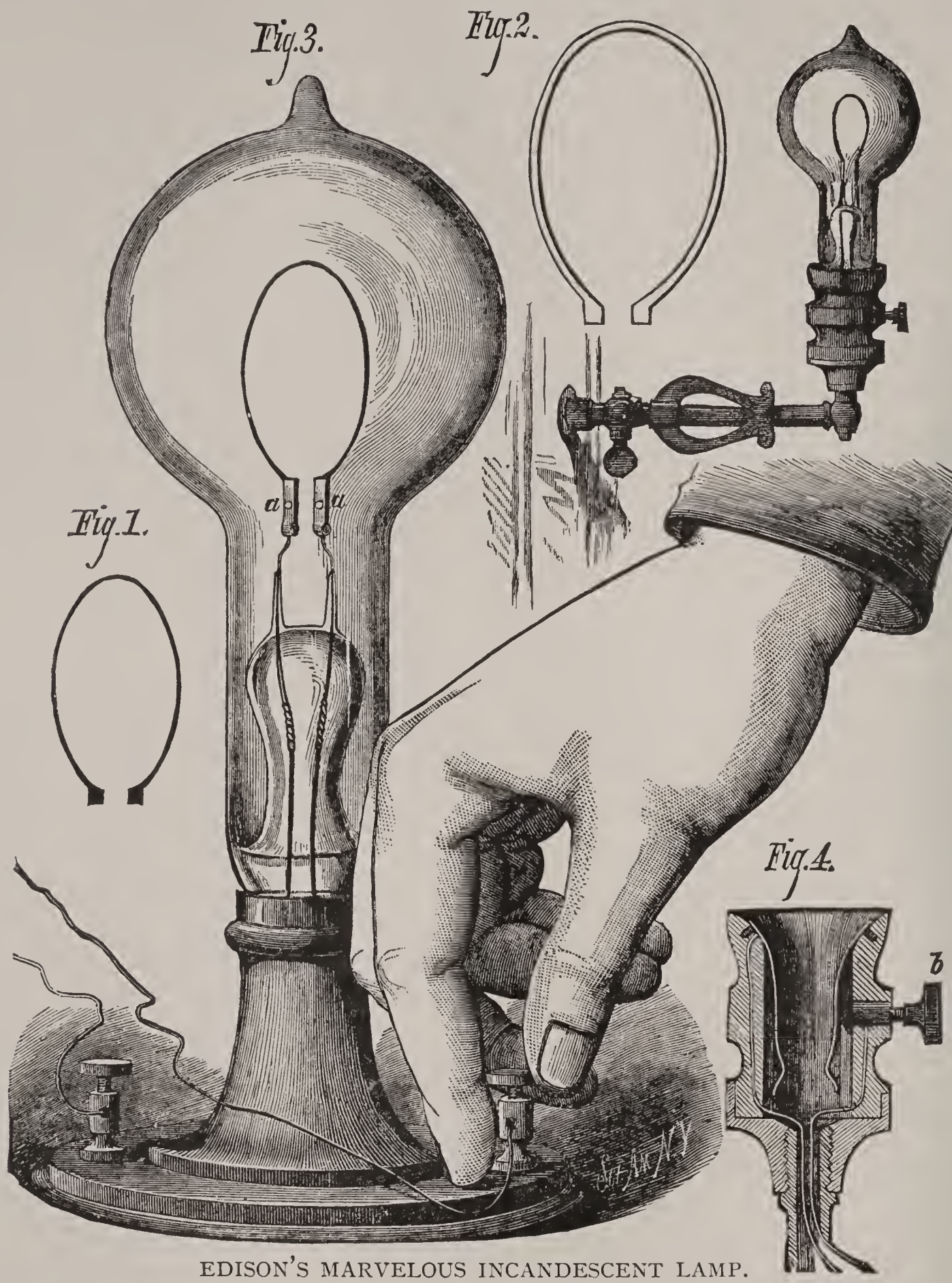
The carbons are so tough that one of them has been subjected to the test of applying and removing the electric current a number of times equivalent to thirty-six years of actual daily use, and without being in the least impaired. The horseshoe form of the carbon has a great advantage over the voltaic arc, the light being softer, more diffused and less trying to the eyes. It is, besides, perfectly uniform and steady. The lamps are connected in multiple arc, that is, the two wires leading from the electrical generator run parallel to each other, and the lamps are placed between them and are connected with each wire.

Easily Handled.

The entire lighting apparatus of any building consists in the lamps and a few wires. The lamp in its present form is as simple and as easily handled as a candle, and can be taken from its socket and replaced even while the current is on. The construction of this socket is shown in Fig. 4. The lamp has, attached to its electrodes, slips of copper which are bent up against the sides of the glass, touching two springs at opposite sides of the socket. One of these springs is connected with one of the electrical conductors; the other merely touches the copper strip, and does not form a part of the electrical conductor until it is touched by the thumb-screw, *b*, this latter being connected with the second electrical conducting wire.

To start the light it is only necessary to turn the screw, *b*, till it touches the spring. To stop the light the screw is turned in the reverse direction. From this it is obvious that an electric lamp is more easily managed

than a gas burner, as it requires neither lighting nor regulating; while it is equally plain that these lamps, having withstood the test of time, the inventor has solved a pro-



EDISON'S MARVELOUS INCANDESCENT LAMP.

found problem, and become one of the world's great benefactors.

Edison's Mimeograph.

The Mimeograph was designed and patented by Mr. Thomas A. Edison. In designing the mimeograph, Mr. Edison took as his fundamental principle the stylus or point, the writing implement of man since the art was first invented. It is the natural tool by which the hand can trace characters, and it is this stylus or point, peculiar to the mimeograph in the line of duplicating machines, which created for it such a decided and permanent popularity.

With the stylus as first principle, Mr.

Edison built the mimeograph, with reference to the stylus as the writing instrument, designing the other parts to meet its requirements.

The mimeograph belongs to the stencil class of duplicating machines, which, as is well known, is the best type of such devices. The stencil is made on a sheet of fine specially manufactured tissue paper, which is coated on one side with a film of sensitive material.

Fine Steel Plate.

The cutting agent of the mimeograph is a plate of fine tool steel, upon which are cut intersecting corrugations, numbering two hundred to the inch, thus making on the plate a surface of small sharp points, so fine and minute that a magnifying glass is required to bring them distinctly to the eye; upon this steel plate, which is imbedded in a table or plate of polished slate, the sheet of sensitive paper is placed, and the stencil is formed by writing on the paper over the steel plate with the stylus, which is made of tempered steel and nickel plated.

As the steel point of the stylus (which is ground to a round or smooth point) passes over the sensitive paper, it presses the paper against and upon the steel plate, and the fine sharp points puncture it from the under side making a series of orifices or holes, each one a two-hundredth part of an inch from the next, in the lines of the writing.

The point of the stylus, although tapered to the size of a nicely sharpened lead pencil, really rests on three of the cutting points of the writing plate (as the corrugated steel is termed) at one time.

It thus glides easily and smoothly over the roughened surface without tearing the paper, but still with just enough friction to make the act of writing a pleasant operation, almost identical to that done by a medium hard lead pencil.

After the stencil is made, the next operation is to prepare the stencil sheet (as the sensitive paper is now called) for the purpose of printing copies of which it is the original.

The ink is squeezed from its collapsible tube upon a slate used for that purpose, and a hand roller made of a peculiar composition is passed over it, spreading the ink evenly over the slate, and at the same time charging the roller.

The sheet of paper upon which the copy is to be printed, is placed upon a blotter resting on the baseboard beneath the stencil sheet, and the ink roller is passed over the stencil sheet, forcing the ink through the perforations and upon the impression paper, thus making a print. This last operation is repeated until the required number of copies are obtained.

The *modus operandi* just described is for the purpose of reduplicating autographic matter.

Edison's Kinetoscope.

Perhaps the simplest statement of the principle upon which this instrument is constructed, would be to call it the reproduction of motion. The observer looks through a glass into a small cabinet and appears to see living figures. These may be men, or animals, and they are in action. Just as the phonograph makes a faithful record of sounds, so the kinetoscope gives us a reproduction of the actions of living creatures.

The following is what Mr. Edison himself says on the subject: "In the year 1887 the idea occurred to me that it was possible to devise an instrument which should do for the eye what the phonograph does for the ear, and that by a combination of the two all motion and sound could be recorded and

reproduced simultaneously. This idea, the germ of which came from the little toy called the zoetrope, and the work of Muybridge, Marie and others, has now been accomplished, so that every change of facial expression can be recorded and reproduced life size. The kinetoscope is only a small model illustrating the present stage of progress, but with each succeeding month new possibilities are brought into view.

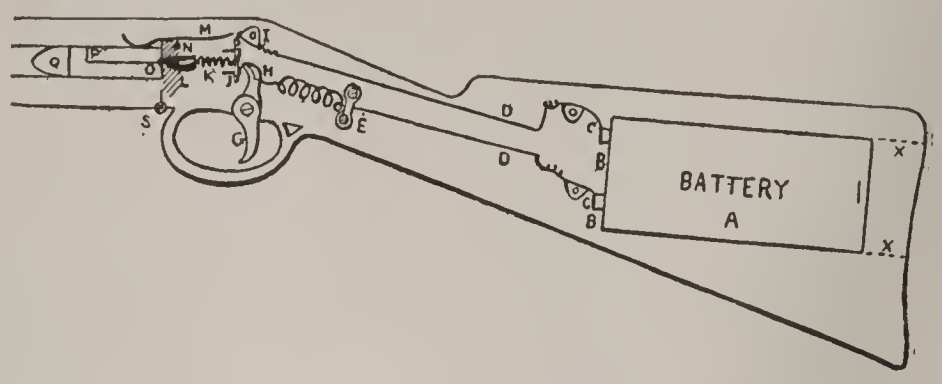
"I believe that in coming years by my own work and that of others, who will doubtless enter the field, grand opera can be given at the Metropolitan Opera House at New York, without any material change from the original, and with artists and musicians long since dead."

After the instrument was perfected the succession of pictures was found to be rapid, and those instruments exhibited in nearly all our towns are found to work most satisfactorily.

Electric Rifles.

The practice of firing big guns by electricity is already well established, but hitherto no practical attempt has been made to explode the shells of small arms electrically. An electric rifle has been designed in which it is sought to carry out this principle.

The source of the current is a battery A, which is fitted into the stock either from the side or from the ends. The holes B B are connected to springs C C, from which the wires D D run respectively to a spring M, bolted at I to the lock plate, and to the insulated hammer H fixed on the upper part of the trigger G. Q is the shell containing an insulated pin, the head of which O projects beyond the base of the shell. If necessary, two pins can be placed parallel with each other and insulated until their points nearly meet. Between the base of the cartridge and the hammer is a pin K encircled by a spring and riveted into a cross plate J at one end, the other end being fitted into an insulated thimble L, the point of which



ELECTRIC RIFLE.

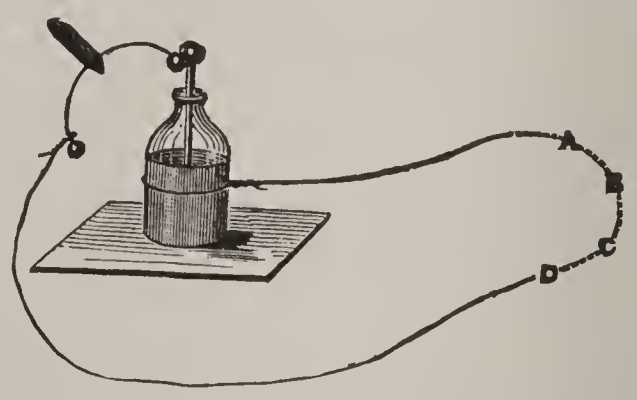
nearly touches the shell pin head O. When the cartridge has been inserted and the gun closed, the spring M rests on the metal base of the cartridge.

As the trigger is pulled, the hammer strikes the plate J forcing the point of the thimble L into contact with the projecting end O of the cartridge pin. An arc is established at P O, which explodes the contents of the cartridge.

The point of the firing pin P can be placed anywhere within the explosive powder of the cartridge, but by extending it near the bullet, as shown in the illustration, a more effective explosion of the powder is secured.

To Get an Electric Shock.

Suppose there are four persons (A, B, C and D) who are desirous of receiving the shock. A wire is wound round the outer



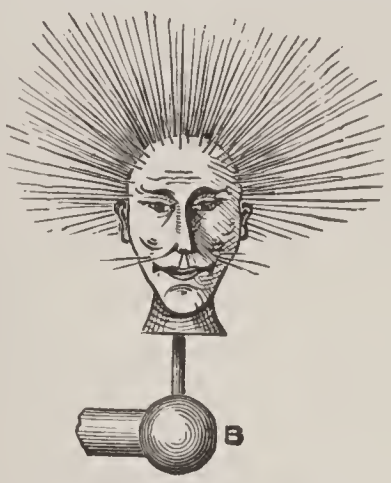
GIVING A SHOCK TO PEOPLE.

coating of the Leyden jar; the jar is then charged and placed on the table. The four persons join hands, and while A holds the

end of the wire leading from the outer coating of the jar, D has also hold of a wire which is in communication with one of the knobs of a discharger. You now seize the insulating handle of the discharger and bring *one* knob only in contact with the knob of the Leyden jar. A shock will be experienced by the four persons, and unless A be cautioned he may, by his sudden antics, pull the jar off the table.

A Singular Effect.

There are many effects, some of them odd and humorous, which can be produced by electricity. For example, place the figure of a human head, with flowing hair, on the



AN ELECTRICAL FRIGHT.

end of a rod stuck into the prime conductor. Immediately it becomes charged with electricity its hair stands on end as if it had received a terrible fright.

How Ocean Cables Are Made.

The cable consists first of a core comprising the conductor made of a strand of copper wires, and the insulating covering of gutta percha or India rubber to prevent leakage of the electric current. Outside of this is a layer of tanned jute yarn. This protects the gutta percha or rubber from the sheathing of steel wires which is the next covering, and which varies according to the depth of water in which the cable is to be laid. Outside of this again is a combination of jute yarn and a bituminous mixture. This is applied in a melted condition from a spout as the cable is passed underneath. During the time the cable is being manufactured and laid, electrical tests are taken to insure perfection.

The finished cable is then kept coiled in large circular iron tanks under water. Similar tanks are in the cable ship, and when at sea the lengths are paid out over a large pulley at the stern. The speed is regulated by several retarding wheels and a brake wheel, over and under which the cable has to pass. The strain to which it is subjected at any given moment is indicated by a dynamometer.

Method of Laying.

When all the cable has been paid out, the end is carefully sealed up and attached to a stout rope. This is lowered to the bottom of the sea and the other end of the rope is attached to a buoy which is to mark the end of the cable, which is usually laid in three sections. One laid, for instance, was started from Waterville and laid out to a given point in deep water. The second section was laid from Canso, on the American side, also into deep water, after which the fifteen hundred intervening miles were laid and all three spliced together.

But the laying of a cable is as nothing to the difficulty experienced in repairing it, especially if the work has to be done during rough weather, when the sea runs mountains high and the gales continually blow the ship away from the scene of operations. Sometimes the cable is found buried in sand several thousand fathoms from the surface of the water. When it is only a flaw and the strands themselves are whole the task of repairing it is slight; but when the cable has actually parted and both ends have to be found and again spliced together, it is sometimes a work of several months.

WONDERFUL PHOTOGRAPHY

. . . BY THE . . .

ROENTGEN RAYS

EARLY in 1896 it was announced that Professor Roentgen, of Wurzburg University, Germany, had discovered a method by which certain substances could be photographed, not merely showing the exterior surface, but also the interior substances. As the composition of the rays of light was unknown, these rays were designated by the algebraical term of X, meaning an unknown quantity. The discovery caused great interest throughout the world, and immediately experiments were begun in many places, especially by professors in medical schools.

It was soon ascertained that some parts of the human body, for example the hand, could be photographed and all solid substances beneath the flesh could be distinctly seen. In this way the bones of the hand are reproduced, and if there should be such a solid substance as a bullet of lead, it can be located and extracted. The importance of this discovery, especially to medical science, cannot be overestimated.

Experiments were carried on at Yale College with the following results: One of the professors laid a sensitive photographic plate horizontally in a wooden box, placed the object to be experimented with on top of the box, and suspended his Crookes tube above them both. He then turned on the electric current, which generated the newly discovered rays in the tube, which, in turn, threw them upon the objects below.

Through Opaque Substances.

In the first experiment Mr. Bumstead used a leather pocketbook containing several coins. He thus photographed the coins, the rays going completely through the leather, the resistance of which was trifling compared with what it would have offered to light. He also photographed in the same way a pair of eyeglasses in their case. The result showed that the glasses were photographed, while the case was scarcely visible. A lead pencil was experimented on, and the result was an excellent picture of the lead, with the wooden portion dimly outlined.

A couple of English walnuts which had never been opened were exposed, and a splendid view of the kernels was obtained. All these exposures lasted about an hour. The experiments were carried on in open daylight, the plates, of course, being kept from the sun in an ordinary holder.

Probably the most interesting of Mr. Bumstead's experiments were those with animals. For this purpose he used a fish, a mouse and a frog. After the usual exposure the backbone of the fish was easily distinguishable.

The frog picture displayed a portion of the skeleton with more or less vividness, the plainest parts being the leg bones. The



PHOTOGRAPH OF HUMAN HAND SHOWING THE ANATOMY IN DETAIL.

most distinct part of the mouse's skeleton was the skull, which could be traced with little difficulty. The little fleshy nose of the mouse did not give nearly as much resistance to the rays as the bone, and this fact was the most useful result of the experiments.

One experimenter relates the result as follows :

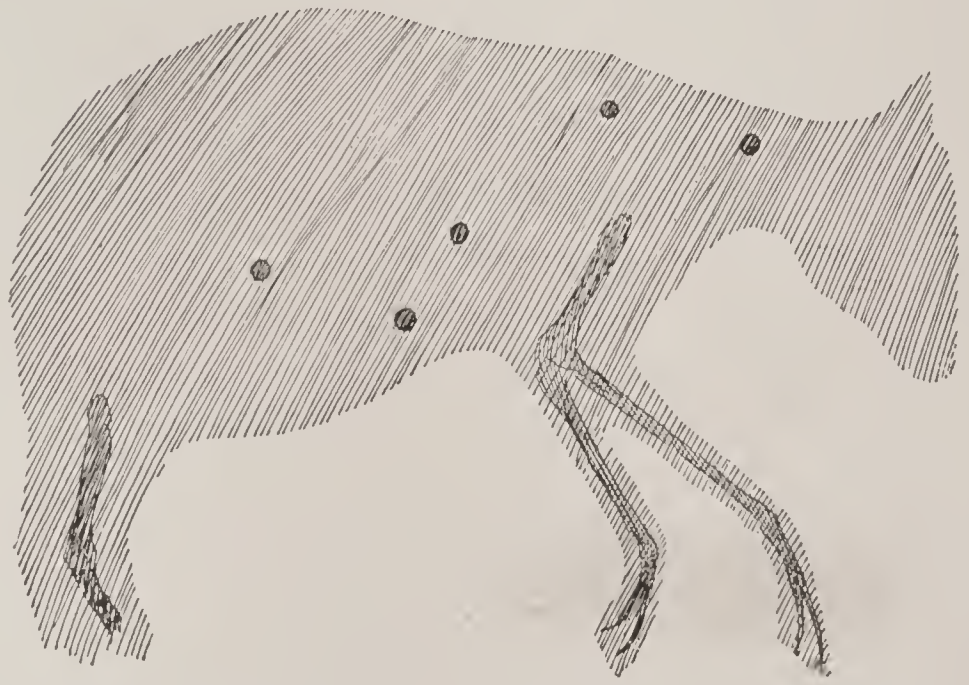
"My last attempt has resulted in giving me a perfect photograph. I used as a subject the leg of a man which had been fractured in a railroad accident two years ago. The fracture was in the upper third of the tibia, or, in other words, in the large bone of the leg a few inches above the knee. I placed an ordinary camera on one side of the leg and directly opposite on the other side of the member I placed the tube at a distance of three or four inches.

"The result was a clearly defined photograph. The bone appears rounded and not flat, as in the shadowgraphs heretofore produced. The fracture is perfectly plain. It can be traced all around the bone. The surface of hardened lime salt, which forms after a fractured bone has been set, shows clearly.

"Then comes the most remarkable part of the photograph. Running down each side of the bone is a line showing the location of the marrow. The marrow is darker in the picture than the bone itself. Then, through the marrow a dark line can be seen, showing the mark of the fracture on the opposite side of the bone. In the centre of the bone are two spots, plainly discernible, showing the fibrous tissues of the nerves."

A standard medical journal comments as follows, upon the advantages of the discovery :

"As far as our present knowledge goes the positive advantages to medicine seem to be limited to three conditions : fractures,



PHOTOGRAPH OF SHOT INSIDE OF A RAT'S BODY.

dislocations, and tumors of bones, encysted bullets, needles or pieces of glass in the tissues and earthy calculi.

"As a means of ascertaining that the parts had been placed in proper position after adjustment, it would however, be most valuable, for of course all splints and dressings, except plaster or metallic splints, would be as 'translucent' as the soft tissues themselves. Its principal value, however, would be in obscure cases with much swelling, 'green-stick' fractures for instance, in partial luxations, and in medico-legal cases when the proper setting of a fracture or reduction of a dislocation was in question.

"In the locating of bullets, some brilliant results have been already recorded, in which the bullet beyond the reach of touch or probe has been found by the X ray and successfully removed."

One experiment at Berlin, Germany, located a needle in the stomach of a young woman which caused great irritation and incessant expectoration of blood. It was determined as a last resort to bring the patient to the Roentgen laboratory in the hope that the X ray would locate the needle, and that it might be extracted without endangering the young woman's life.

The plate plainly showed every bone of the upper part of the body and the needle was found lying point downward in the lower right angle of the stomach.

Surgeons being present, it was resolved to remove the needle at once. The patient was placed under the influence of chloroform, and the cause of the excruciating sufferings which threatened her life, was taken from the stomach by skillful surgical manipulations.

The statement has been made that if, at the time President Garfield was felled by an assassin's pistol, this method of photography had been in use, the bullet could have been located and doubtless the life of the President could have been saved. The probes of the surgeons were of no avail; they were working in the dark. No such fatal result could have happened if this new discovery had been known at that time. Its effects upon medical science are of the most marked and beneficial description.

The announcement has already been made that success has attended efforts to photograph the brain, thus locating tumors in that organ. In fact, the whole human body is likely to be surveyed and examined in all the workings of its wondrous mechanism. A photograph will tell the surgeon just what internal parts are diseased and will save all exploration with the knife. This, apart from the curiosity attending such a discovery, has led the scientific world to hail the new photography with delight.

PHENOMENA OF LIGHT

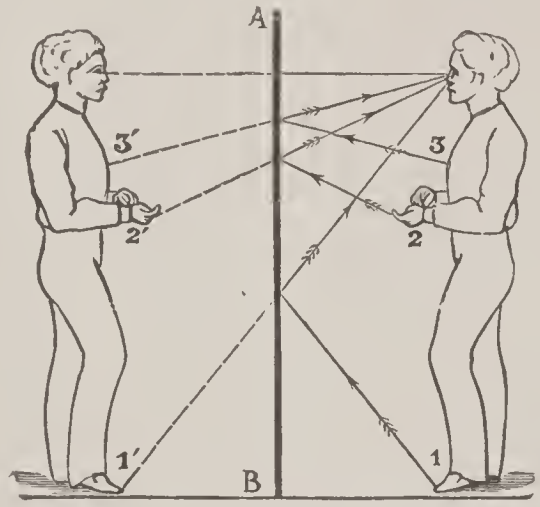
SUBSTANCES which are not sources of light have the power to reflect it from their surfaces when it falls on them. Thus glass is a very good reflector; and the still surface of water is also exceedingly good in this respect, so that as you walk along the bank of a river its surface may appear like pearl by reflecting the white light of the clouds, and its margin greener than the emerald in mirroring the grassy slopes of the bank on the other side.

We are now in a position to consider the formation of the image in a large looking-glass. The observer standing on the right receives borrowed light proceeding from the points 1, 2 and 3 (see figure), which is again reflected from the surface of the glass into his eye. As a result the observer perceives his very image at each of the three points 1, 2 and 3, appearing behind the glass at 1′, 2′ and 3′, and the same with all the points between and around which make up the object and image.

A Curious Effect of Reflection.

If you take this book and turn any of its pages towards a looking-glass, you will find, upon attempting to read the reflected print, that you cannot do so at all. The word MAGIC, for example, appears as if it were reversed; and so with any other word, for they look just as they would if we could take each word and turn it completely over around one end as centre. This phenomenon is known as *lateral inversion*, and you really see it when you look at your image in a looking-glass, for the left side of your face appears really as the right side in the looking-glass, and so on.

You would have to travel now for many a day to find an educated person who believes in ghosts. Time was, however, when you would have to travel quite as long to find some one who did not believe in them.

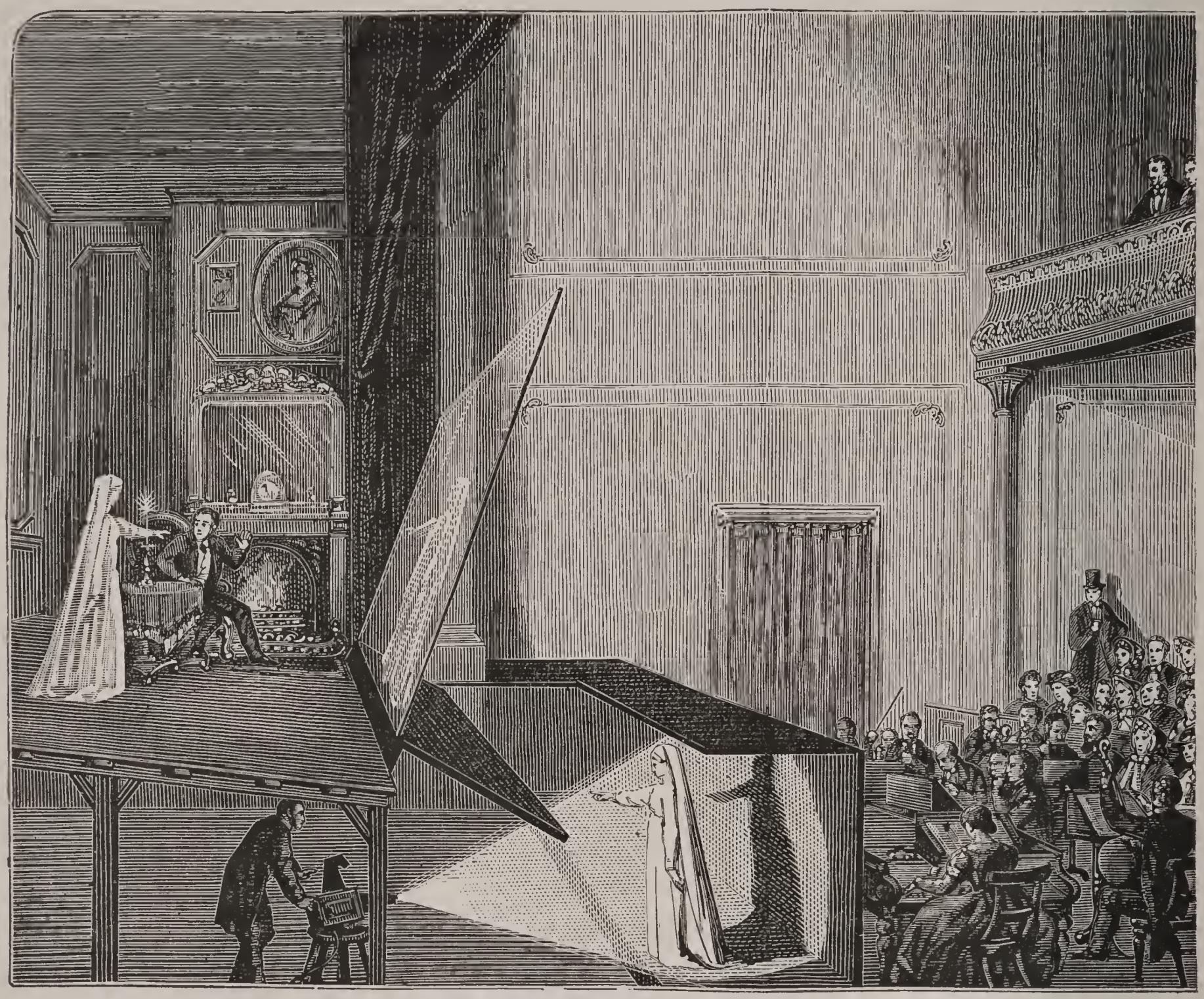


HOW YOU SEE YOURSELF IN A MIRROR.

There could then be found people who had seen them, so they thought, with their own eyes, and therefore were as much convinced of their reality as Hamlet was when he saw the ghost of his father at Elsinore. The belief still exists in unfrequented nooks—places where advanced ideas are a long time in reaching—and it exists alongside with a belief in witchcraft and such like nonsense. When a ghost appears nowadays, an investigation—not always of the gentlest kind—has generally shown that the sheeted spectre has been made of solid flesh, much too solid

to vanish or permit of a stout cudgel passing through it. By universal consent, then, ghosts are now relegated to the stage. How real they appear there probably every lad is aware, for has he not seen them in white flowing robes, walking along and speaking, and exhibiting the ghostly attribute of permitting a performer to run his sword through them without their being in the least affected? For many a day after he has doubtless wondered how the thing was done, and has at last given it up in despair, while all the time the explanation was to be had without stepping out of doors even, so very easy to understand are some of these things.

Often, when you have stood gazing out of the window in the evening, you have seen, as if outside, a lamp or gas-jet, but the exact picture of the light within the room. The *ghost* of the light, it is plain at once to see, results from the transparent pane of glass just opposite you acting as a reflector. Pepper's famous ghost is produced just in the same way.



THE FAMOUS PEPPER GHOST.

A large plate of transparent glass on the stage faces the audience, being inclined at an angle of 45°. Below this the actor stands in a pit, with a strong light falling on him. The audience cannot see him, but his image as reflected from the glass is very ap-

parent, and seems to be on the stage and somewhere behind the transparent reflector, so that in gazing steadfastly at the ghost you fail to perceive the glass which produces it. Ghosts produced in this way are often shown, but you will have no difficulty in detecting the large plate of glass on the stage now that your attention is directed to it.

Long-Distance Signals.

Often during the campaigns in Zululand, Afghanistan and Cuba a peculiar mode of transmitting news was adopted when the telegraph lines had been cut by the enemy, or where no telegraph lines had been erected. The plan is so exceedingly simple that you will understand it at once. You have often noticed that the window-panes of houses miles away have looked like burnished gold; it has happened at such times that they were so placed with reference to the sun and yourself that the light from the great luminary has been reflected from them straight in your direction. A single bit of looking-glass placed in the same plane as these windows would have acted just in the same way.

Now suppose you have a comrade on a distant hill, with a piece of looking-glass so placed that the light of the sun or moon is sent in your direction, you could see the flare a great many miles away, and each time he brought his cap before it the bright point would disappear. If, therefore, you have arranged with your friend that a certain number of times of taking his cap away from the mirror—that is, of producing a given number of flashes—shall mean a certain thing, he is able to communicate with you; and if you have a mirror too, you may communicate with him, and so hold a conversation.

Often in this way has one camp flashed news to another over the heads of their common enemies, and the line of communication could not be cut, as would have been the case had the two camps been connected by ordinary telegraph. Here, then, we see one of the most elementary principles in Physics employed for a very important purpose.

Many a time in thoughtful mood you will have watched the dancing shadows formed by the flickering firelight, and perchance, as your own shadow has suddenly appeared on the wall behind you, you have given a start at its giant size and extraordinary form. You can readily perceive the cause of such a shadow, which is briefly this—that light from the fire travelling in straight lines cannot pass round corners to any marked extent, so that when an object stands in its way all behind it is in darkness, and the form of this area of darkness will vary with each movement. Hence, from the same object employed as a light obstructor a wonderful variety of shadow-forms may be produced, and perhaps in nothing is this so remarkably shown as in hand-shadows.

Singular Shadow-Pictures.

In the accompanying cut you have a variety of hand-shadows with the particular disposition of the hands which is required to produce them. Other forms of hand-shadows you will doubtless find out as you are practicing these, and they will afford many a half-hour's amusement as you lead out your shadow-animals, including the bear and the goat, the dog and the pig, and a host of others.

We need scarely give any directions as to their production, for, if the gas-light be, say, in the middle of the room, and you want to cast the hand-shadows on a particular wall,

the hands are brought between the gas-light and the wall, and their distance from the former is regulated according to your wish as to the size of shadow you want. We may add that you will be able easily to represent the jaws of your hand-shadows moving by bringing together and separating the parts which give rise to the shadow of the mouth. Moreover, if you are able to imitate the sounds of any of the beasts whose hand-shadows you can form—as, for example, the bark of the dog, the bray of the donkey, and the lowing of the cow—your entertainment becomes complete.



HAND-SHADOWS OF ANIMALS.

Famous Gems

A ROYAL gift is now in the hands of the Pope of Rome. It is a diamond, the size of which has never been equalled in the whole world, unless the story of the Braganza diamond was true. That diamond, it was said, weighed in the rough 1680 carats. The loss in cutting generally comes to one-half or a little less than two-thirds. This would make the gem weigh about 560 carats when cut. The stone was said to be worth £3,000,000 sterling or $15,000,000. What became of the Braganza is not known. It is probably now famous after successive cuttings and various owners under a name which has no association with the original finder.

Very little is yet known of the immense diamond now the property of the Pope. The meagre cable despatches from Rome said that it was found by an African chief in the mines at Jagersfontein, and is said to be the largest known, weighing in the rough 971 carats. It came into the possession of the President of the Transvaal Republic, who sent it to the Pope. It is described as being of a bluish white cast and practically perfect, the only blemish being a tiny spot, invisible to the naked eye.

What the value of this stone is can hardly be estimated. When cut the weight of the stone will be about 450 carats, and, if perfect, it should be worth the gigantic sum of $20,000,000. Large South African diamonds have not the same value that the Brazilian stones have. An eighty-carat gem is a common find in the African mines, but most of the large stones discovered there are yellow in color, which largely depreciates the value. Still, from its gigantic size, the Pope's diamond has at once taken a foremost place among the great gems of the world, and two thousand years from now it will probably be talked and written about just as the Koh-i-noor is to-day.

The Queen of Jewels.

The most valuable cut stone in the world is the King of Portugal's Brazil diamond, which weighs 525 carats and is worth, if genuine, the magnificent sum of $28,000,000.

The Koh-i-noor or mountain of light, owned by Queen Victoria, is worth $3,500,000. This brilliant is 2000 years old. The Hindoos trace it back to the time of the god Krischna. It was certainly in the treasury of Delhi, and was taken in the conquest of

that city by Ala-ed-Din. From him it came into the possession of the Sultan Baber, of the Mogul dynasty, in 1526. This prince esteemed its worth at the sum which it would take to maintain the whole world for a single day. The jewel was seen by Tavernier among the jewels of Aurengzebe, but it had been reduced by the unskillful cutting of Hortensio Borgio from 793 carats to 186, the weight it possessed at the Paris Exhibition of 1851.

The Emperor Indignant.

The Emperor Aurengzebe not only refused to pay Borgio for the cutting, so incensed was he at the great loss, but he confiscated all of his property, and was with great difficulty prevented from cutting off his head.

Nadir Shah, the conqueror of India, possessed himself of the stone by a trick; then it passed from his descendants into the possession of Achmed Shah, whose son, Shah Sujah, was forced, in his turn, to give the prize to Runjeet Singh. After the capture of Lahore, at the time of the Sikh mutiny, it fell into the hands of the British troops, who presented it to Queen Victoria in 1850.

The brilliant had an irregular form, with several hollows at the base and at the sides, and there were several fissures on the surface. After great discussion among scientists the stone was intrusted to Mr. Costen, of Amsterdam, for recutting, and the results were marvelous. Little was lost in size comparatively, and, instead of being a lusterless mass little better than a piece of rock crystal, it is now a matchless, fire-flashing brilliant weighing 10 1-16 carats, and forms a valuable part of the crown jewels of England.

One of the diamond wonders of the world is the Orloff, which is set in the scepter of the Czars of Russia. It weighs 194¼ carats. Like the Koh-i-noor it has the under side flat and is rose cut. The diamond is supposed to have formed one of the eyes of an idol in a Brahmin temple. It is also said to have been set in the famous peacock throne of Nadir Shah.

Be its origin what it may, it is certain that it was stolen by a Frenchman, who sold it in Malabar for £28,000. It was purchased by the Armenian Schaffras, who, in turn, sold it in the year 1774 to the Empress Catharine II. of Russia for 450,000 roubles, a pension of 20,000 roubles and a patent of nobility. Another beautiful diamond belonging among the Russian crown jewels is the Shah, which weighs 86 carats and is absolutely perfect, a mass of fire and brilliancy. It was presented to the Emperor of Russia by Cosroes, the son of Abbas Mirza.

Famous French Gem.

Among the other famous diamonds is the Regent or Pitt diamond, which forms part of the French crown jewels. Its weight is 136¾ carats, and its estimated worth to-day is $1,000,000. It was bought by the Duke of Orleans, then Regent of France, of Pitt, the Governor of Fort George, in the year 1717, for £135,000, in the rough stone weighing 410 carats, and the cutting cost £2000. Pitt published a pamphlet declaring that he purchased the stone in Golconda of Jamelchund, a Hindo merchant. This diamond was stolen from the Garde Meuble in 1792, but was mysteriously restored. Its final cutting occupied two years and cost £3500.

The Emperor Napoleon I. had it set in the hilt of his sword of state, and it was captured by the Prussians at Waterloo. This wonderful stone was shown at the French Exhibition in 1855.

The Empress Eugenie has a superb stone, absolutely perfect, which weighs 51 carats; it is set as a pendant, and was purchased for her by Napoleon III.

The Florentine belongs to the Emperor of Austria; it weighs 139½ carats, and it is worth $500,000. It is yellowish in color and is rather thickly covered with facets like a rose diamond. In shape it is pointed top and bottom.

Disappeared and Returned.

The noted Sancy diamond is almond-shaped; it weighs 53½ carats; it was found on the body of the Duke of Burgundy in 1479 and was bought by the King of Portugal. After many changes it finally came to James II. of England, who sold it to Louis XIV. for £25,000. It disappeared, with many other valuable things, in the dark days of the Revolution, and some years later became by purchase the property of Prince Paul Demidoff.

After the battle of Culloden the city of London purchased a magnificent diamond at a cost of $57,000 and presented it to the Duke of Cumberland. It was known thereafter as the Cumberland diamond; its weight is 32 carats. It was one of the the stones claimed by the crown of Holland.

There are perhaps 8,000 dealers in diamonds in the world who carry in their stock stones worth perhaps $350,000,000. The remainder are in the hands of private individuals. There is always something fascinating about the subject of diamonds, and rich and poor like to read about precious stones. It is estimated that during the last twenty-five years the American people have paid duty on at least $180,000,000 worth of diamonds and other precious stones. In 1893 alone they imported $15,203,563 worth, but in 1894 there was a falling off, owing to the hard times, and the total was only $4,856,895. This does not include uncut diamonds, of which we imported more than 1,000,000 worth in 1892, $800,000 worth in 1893, and $566,267 worth in 1894.

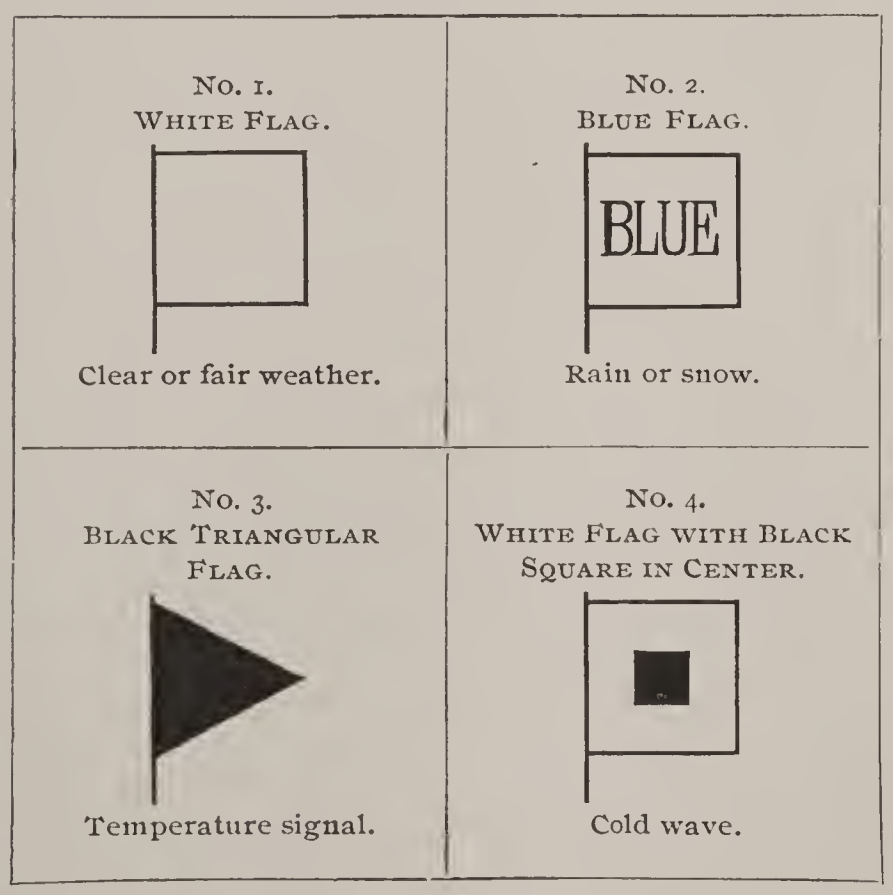
Diamond-Cutting.

In 1880 we imported only $129,000 worth of uncut diamonds, and in 1889 only $250,000 worth. The large increase of late has been due to the fact that a number of American jewelers have opened diamond-cutting establishments. There are now fifteen establishments in the United States, which employ from one to twenty men. There are 4,000 manufacturers in Europe and about 200 in the United States, who employ between 7,000 and 8,000 persons as cutters and polishers.

Perhaps 28,000 people are employed in the diamond mines throughout the world. We read that in past centuries 60,000 people were working in some single Indian mines at one time, and perhaps that statement is not exaggerated, since by the aid of modern machinery one miner can now accomplish as much as twenty who use the primitive methods. The total value of all the diamonds in the world undoubtedly exceeds $1,000,000,000.

The Weather
AND
Weather Signals

THE new system of weather signals was introduced by the United States Signal Office of the War Department in 1887, and has since been in use at all the stations of the service. The flags adopted for this purpose are four in number, and of the form and dimensions indicated below:



Number 1, white flag, six feet square, indicates clear or fair weather. Number 2, blue flag, six feet square, indicates rain or snow. Number 3, black triangular flag, four feet at the base and six feet in length, always refers to temperature; when placed above numbers 1 or 2 it indicates warmer weather; when placed below numbers 1 or 2 it indicates colder weather; when not displayed, the indications are that the temperature will remain stationary, or that the change in temperature will not vary five degrees from the temperature of the same hour of the preceding day.

Number 4, white flag, six feet square, with black square in center, indicates the approach of a sudden and decided fall in temperature. This signal is usually ordered at least twenty-four hours in advance of the cold wave. It is not displayed unless a temperature of forty-five degrees, or lower, is expected. When number 4 is displayed, number 3 is always omitted.

When displayed on poles, the signals are arranged to read downwards; when displayed from horizontal supports, a small streamer is attached to indicate the point from which the signals are to be read.

No. 1, alone, indicates fair weather, stationary temperature.

No. 2, alone, indicates rain or snow, stationary temperature.

No. 1, with No. 3 below it, indicates fair weather, colder.

No. 2, with No. 3 above it, indicates warmer weather, rain or snow.

No. 1, with No. 4 below it, indicates fair weather, cold wave.

No. 3, with Nos. 1 and 2 below it, indicates warmer, fair weather, followed by rain or snow.

No. 4, followed by Nos. 2, 1 and 3, in the order given, indicates the approach of a cold wave, to be succeeded by rain or snow—this, in turn to be followed by fair weather and colder temperature.

Storm, Cautionary and Wind-Direction Signals.

A red flag with a black center indicates that the storm is expected to be of marked violence. A yellow flag with a white center indicates that the winds expected will not be so severe, but brisk; seaworthy vessels can meet them without danger. The red pennant indicates easterly winds, that is, from the northeast to *south* inclusive, and that generally the storm center is approaching.

If *above* cautionary or storm-signal, winds from northeast quadrant are more probable; *below*, winds from southeast quadrant. The white pennant indicates westerly winds; that is, from *north* to southwest inclusive, and that generally the storm center has passed. If *above* cautionary or storm-signal, winds from northeast quadrant are more probable; if *below*, winds from southwest quadrant.

Winds and Storms.

Constant Winds.—The Trade Winds are due to the inrush of cold air from the poles toward the equator in order to supply the place of the heated column of air which ascends from the latter; owing to the eastward rotation of the earth, the air proceeding from the N. becomes a N. E. wind, and that from the S. a S. E. wind. The heated air flows to the poles as an upper current, and, cooling, descends to the surface to form the westerly winds, or anti-trades, of the temperate zones.

Variable Winds.—When in turn each of the northern and southern hemispheres is brought directly under the sun's influence, a heated column ascends, and a consequent inrush of the surrounding air takes place, giving rise to the periodical winds or Monsoons.

Peculiar Winds.—The more important are the Mistral, Fohn and Sirocco, confined to the countries of the Mediterranean. A hot, dry wind blows from Central Africa, termed variously the Khamsin in Egypt, Sirocco in Algeria, Shume in Morocco, and the Harmattan in Upper Guinea. A hot wind occurs on the coasts of Australia, termed the Australian Harmattan. Cold, dry winds, the "Northers," occur in the Western Mississippi and Gulf of Mexico. The cold Puna winds of South America blow west from the ice-topped Cordillera. The Pamperos, strong, dry, sudden S. W. winds, occur in the S. E. of South America.

Calms.—At the meeting line of the trade winds in the equatorial regions a belt of calms is observed, called the Equatorial Calms. Between the beginning of the westerly winds and that of the trades, there is a second series termed the Calms of Cancer and Capricorn.

Whirlwinds occur in the desert regions of the tropics during the hot season, and are caused by the friction of two winds moving in opposite directions, the direction of rotation being taken from the wind which prevails.

Hurricanes are vast whirlwinds of great velocity and destructive power, experienced

in certain areas of the tropical and adjoining temperate zones.

The TYPHOONS of eastern seas are similar to hurricanes in effect, and are probably due to the meeting of the S. W. Monsoon with the N. E. Trade.

TORNADOES are a species of hurricane met with on the west coast of Africa and in West Indian seas between 10° S. and 20° N. lat.

EUROPEAN STORMS have a course from S. W. to N. E., and seldom extend over an area of less than 600 miles in breadth.

Weather Signs.

A rainbow in the morning gives the shepherd warning; that is, if the wind be easterly, because it shows that the rain cloud is approaching the observer.

A rainbow at night is the shepherd's delight. This is also a good sign, provided the wind be westerly, as it shows that the rain clouds are passing away.

Evening red and next morning gray are certain signs of a beautiful day.

When the glow worm lights her lamp, the air is always damp.

If the cock goes crowing to bed, he'll certainly rise with a watery head.

When you see gossamer flying, be ye sure the air is drying.

When black snails cross your path, black clouds much moisture hath.

When the peacock loudly bawls, soon we'll have both rain and squalls.

If the moon shows like a silver shield, be not afraid to reap your field.

But if she rises haloed round, soon we'll tread on deluged ground.

When crows fly sporting high in the air, it shows that windy storms are near.

RAILROAD SIGNALLING

IT is doubtful whether the aggregate plant used in all manufacturing industries can equal the value of railroads. The capital engaged in banking is but a trifle beside it. The world's whole stock of money of every kind, gold, silver, and paper, would purchase only a third of its railroads.

Some of the most colossal fortunes ever accumulated by single individuals have grown out of their moneyed interest in railroads. As a means of investment and making money on the rapid plan, railroad stocks are unsurpassed. While in some instances the bubble has burst and the result has been bankruptcy, in others, the effect has been opposite.

Yet these facts by no means measure the whole importance of the railroad in the modern industrial system. The business methods of to-day are in one sense the direct results of improved means of transportation. The railroad enables the large establishment to reach the markets of the world with its products; it enables the large cities to receive their food supplies, if neces-

sary, from a distance of hundreds or thousands of miles. And while it thus favors the concentration of capital, it is in itself an extreme type of this concentration.

American Railway Signals.

One pull of the bell cord signifies "stop."

Two pulls mean "go ahead."

Three pulls mean "back up."

One whistle signifies "down brakes."

Two whistles signify "off brakes."

Three whistles mean "back up."

Continued whistles indicate "danger."

Short rapid whistles, "a cattle alarm."

A sweeping parting of the hands on a level with the eyes means "go ahead."

A slowly sweeping meeting of the hands over the head signifies "back slowly."

A downward motion of the hands, with extended arms, signifies "stop."

A beckoning motion with one hand indicates "back."

A red flag waved up the track indicates "danger."

A red flag by the roadside means "danger ahead."

A red flag carried on a locomotive signifies "an engine following."

A red flag raised at a station means "stop."

A lantern swung at right angles across the track means "stop."

A lantern raised and lowered vertically is a signal to "start."

A lantern swung in a circle signifies "back the train."

In traveling in a railway train, everyone must have observed the signal-boxes, which differ very much in size—from that of a small hut, with its three or four shafts or steel handles, to that of a considerable cottage at a junction, with thirty, forty, or even more. And in front of this glistening line stands the signalman, moving backwards and forwards, now closing this which had been open, now opening that which had been shut.



WAYSIDE SIGNAL-BOX.

But the mere opening and shutting of these bristling steel handles form but a small part of his work, though these shafts communicate with and open or close them.

In every signal-box—at all events, in every box of great extent—there are two clocks of somewhat peculiar construction right in front of this row of handles—clocks which can be seen immediately on looking up. Then near at hand are telegraph dials and bells for receiving messages, as well as

telegraph-despatching desks, and a writing-desk in the corner, on which books of record are carefully laid out.

The main end of the block system is to prevent more than one train or engine moving between two signal-boxes at the same time. Everyone knows the semaphore signal—up for danger, down for clear line; the main line is clear; and it is because of this that lapses of memory, leading to fatal issues, are most likely to arise.

For it has to be remembered that the signalman must give the same attention to a single engine, or to an engine with one baggage car, as to an express train; he must signal to the next station what it is that he



INTERIOR OF A SIGNAL-BOX.

and this summarizes the signalman's primary duty.

Where this alone is the requirement, the work is much simplified and straightforward, but where traffic is great it is inevitable that there should be no end of goods trains, return engines, trucks, and cars, which, to make way for the specials and expresses, must be switched into sidings to wait for relief till has passed, and whether it bears a lamp behind it, and of what character, so that the next signalman may be certain, whether in dark or light, that he has passed all intact that his predecessor did, and that nothing has slipped or parted from the engine.

It requires a man of cool temper and clear head to be charged with such vast responsibility, involving property and human life.

BUILDING SOCIETIES

A MORE popular description of these societies would be, societies by which every man may become "his own landlord," their main purpose being to collect together the small periodical subscriptions of a number of members, until each in his turn has been able to receive a sum sufficient to aid him materially in buying his dwelling house.

The origin and early history of these societies is not very clearly traceable. A mention of "building clubs" in Birmingham, England, occurs in 1795; one is known to have been established by deed in the year of 1809 at Greenwich; another is said to have been founded in 1825, under the auspices of the Earl of Selkirk, at Kirkculbright, in Scotland.

We furnish below a sample Constitution of a prosperous Building Society, which can be used in the organization of one of these Associations.

CONSTITUTION.

ARTICLE I.

TITLE AND OBJECT.

This Association shall be known by the name, style and title of the

AMERICAN BUILDING AND LOAN ASSOCIATION,

the character and object of which is to accumulate a fund by the contribution of its members, which shall enable them to purchase a homestead or other real estate, or to borrow money for their use and investment in any lawful business, and for these purposes to have, possess and enjoy all the rights, benefits and privileges of the Acts of Assembly in such cases made and provided.

ARTICLE II.

STOCKHOLDERS.

The stockholders of this Association shall be Citizens of the United States. Women can hold stock in their own right, minors by guardians or trustees.

ARTICLE III.

ELECTIONS AND OFFICERS.

The number, title, functions and compensation of the Officers of this Association, their terms of office, the time of their election, as well as qualifications of electors, the manner of voting and of holding the periodical meetings, shall be determined by the By-Laws.

ARTICLE IV.

SHARES.

Section 1. The stock of this Association shall be issued in Annual Series; and the capital shall not consist of more than 5000 shares.

Sec. 2. Every stockholder shall pay a subscription fee of twenty-five cents per share upon joining the Association, and thereafter one dollar dues per share every month. These payments shall be made to the Board of Directors at the place to be designated by the stockholders. No stockholder shall hold more than fifty shares in one series.

Sec. 3. Stockholders not having loans, in arrears in their monthly contributions for the term of six months, shall be regarded as having withdrawn from the Association, and shall receive in full payment of their claims against the same, the actual amount of monthly dues paid by them, without interest, first deducting all fines charged against their shares. Every share of stock shall be subject to a lien for the payment of unpaid instalments and other charges incurred thereon. The By-Laws may prescribe the form and manner of enforcing such lien.

Sec. 4. Stockholders desiring to withdraw from the Association shall, after having given thirty days' notice of their intention so to do, receive, after the expiration of the first year, interest on their monthly dues at the rate of six per cent. per annum, less the losses and expenses incurred on each share.

Sec. 5. Upon the death of a stockholder, his or her legal representatives shall be entitled to receive the amount paid in on his or her stock, with interest at six per cent. per annum, less all fines and other charges. No fines shall be charged to a deceased member's account after his or her decease, unless the legal representatives of such decedent, by continuing the payments on such stock for three months after his or her decease, shall have thereby assumed the further payment on the stock.

ARTICLE V.

LOANS.

Section 1. Every stockholder shall be entitled to a loan of two hundred dollars on each share of stock, and the preference shall be given to the stockholder bidding the highest premium, which premium, if any be bid, shall be paid once only.

Sec. 2. Stockholders having taken loans from the Association, shall pay interest to the Board of Directors monthly, at the rate of six per cent. per annum for the amount of money actually received by them. The interest shall be reduced at the end of the fiscal year to the extent of the amount paid off annually on the principal during the year, and interest be charged only on the balance for the ensuing year.

A loan may be paid off at any time, in one payment, in larger payments than regular dues, or by regular monthly payments, but it shall be expressly understood that said payments of monthly dues, or larger payments, shall be payments on account of the loan or mortgage.

When the whole amount of a loan has been paid off in payments of monthly dues, or by larger payments as aforesaid, such stockholder shall receive his securities and have them satisfied of record; provided that all arrears and expenses be fully paid and discharged.

Sec. 3. In case a stockholder having a loan shall be in arrears in his monthly dues for the term of six months, the Board of Directors may proceed to collect the whole amount of the loan, with interest and expenses, according to law. This action must be ordered by at least a three-fourths vote of the Board.

ARTICLE VI.

CONTINUANCE OF CORPORATION.

This corporation shall not expire or be dissolved from neglect on the part of the stockholders to elect officers at the time mentioned in the Charter or By-Laws, and all elected officers shall hold their offices until their successors have been duly elected.

ARTICLE VII.

CERTIFICATES OF STOCK.

Every stockholder shall be entitled to a certificate for the stock held by him or her, to be issued in the name and under the seal of the Association, signed by the President and attested by the Secretary, which certificates may be transferred or assigned, in person or by attorney, in the presence of the Secretary; and such transferee, by complying with the rules and regulations of the Association, may become a member thereof. Fifty cents shall be paid to the Secretary for such transfer of the stock, and for duplicates issued to replace lost certificates.

ARTICLE VIII.

WITHDRAWAL AND CANCELLATION.

The By-Laws may provide for the involuntary withdrawal and cancellation, at or before maturity, of shares of stock not borrowed on; provided that such withdrawal and cancellation shall be pro rata among the shares of the same series of stock; and provided further, that not less than legal interest shall be credited and allowed to each share so withdrawn and cancelled.

ARTICLE IX.

DISTRIBUTION.

Stockholders having loans from the Association pay back the actual amount received.

Stockholders having no loans may continue to pay their monthly dues until the real assets of the Association are sufficient to pay the sum of $200 on each share.

ARTICLE X.

BY-LAWS.

The Stockholders may make or alter By-Laws for the better management of the Association, which shall not be repugnant to this Constitution, to the Constitution of this Commonwealth, or of the United States of America.

ARTICLE XI.

ALTERATION OF THE CONSTITUTION.

The Constitution or the By-Laws shall not be altered or amended, except at a regular monthly or special meeting of the stockholders, and then only by the vote of two-thirds of the members present.

The table given below will answer many inquiries concerning earning powers.

Table of Earning Powers.

These powers are 1, 4, 9, 16, 25, 36, 49, 64, 81, 140, 121 and 144. While not exactly true, they are based on the view that when $12 have been paid in—$1 each month—the average time is six months for the total $12.

In the partnership plan the total gain is divided anew every year, so as to give each dollar invested a like per cent. per annum. It is assumed that $12 invested for six months has an earning power of "one." It follows then that $24 invested for an average of one year has the earning power of "four," because 24 is twice the amount of $12, and because 12 months is twice the time of six months. One is twice the money and twice the time of the other. Two powers represent money and two powers represent time; therefore $2 \times 2 = 4$.

It will be seen that $120 is ten times as much as $12, and that the time of investment is ten times as long; therefore, $10 \times 10 = 100$ for the power of $120. These powers are obtained by squaring the number of years that the series have run, namely, $12 \times 12 = 144$, for $144 paid in.

The table referred to is as follows:

$144	÷ 12 =	12	× 12 =	144	× 6 =	$8 64 one per ct.
132	÷ 12 =	11	× 11 =	121	× 6 =	7 26 one per ct.
120	÷ 12 =	10	× 10 =	100	× 6 =	6 00 one per ct.
108	÷ 12 =	9	× 9 =	81	× 6 =	4 86 one per ct.
96	÷ 12 =	8	× 8 =	64	× 6 =	3 84 one per ct.
84	÷ 12 =	7	× 7 =	49	× 6 =	2 94 one per ct.
72	÷ 12 =	6	× 6 =	36	× 6 =	2 16 one per ct.
60	÷ 12 =	5	× 5 =	25	× 6 =	1 50 one per ct.
48	÷ 12 =	4	× 4 =	16	× 6 =	96 one per ct.
36	÷ 12 =	3	× 3 =	9	× 6 =	54 one per ct.
24	÷ 12 =	2	× 2 =	4	× 6 =	24 one per ct.
12	÷ 12 =	1	× 1 =	1	× 6 =	06 one per ct.

The table also shows what one per cent. gain is at the end of one year and up to the end of 12 years.

The rule to find one per cent. is as follows: Square the number of years in a series and multiply by 6.

Years.			OPERATION.			One per cent.
10	×	10	= 100	×	6	= $6 00

The use of this one per cent. table is to ascertain the rate of gain per annum credited on building society reports to the various shares of stock when share values are given on the reports. After the profits are divided the accountant may make sure that each dollar invested has received a like per cent. per annum by making proper use of the "one per cent." column in the above table. We give as an example the following figures from a report:

Paid in.	Gains.	Values.
$60	$12 00	$72 00
48	7 68	55 68
36	4 32	40 32
24	1 92	25 92
12	48	12 48

INDOOR AMUSEMENTS

MAKE home bright and happy. Throw open the shutters and let in the sunlight. Some homes have a cold chill about them, for the reason that it is all work and no play, no amusement. Food must be provided for the young; so must pastime. There are games that not only amuse, but also discipline the mind and teach one to think, to look ahead, to work out of tight places. One of these is

CHESS.

Chess—ancient as it is—still holds its own against all "new-born gauds." It is still the favorite game among the educated, and is considered an essential accomplishment in most family circles, where, beyond doubt, it is beneficial in assisting the mental development of the young.

The game is played on a board divided into sixty-four squares, colored alternately black and white. It is the same as that used at Draughts. Eight pieces of different denominations and powers, and eight Pawns, are allotted to each compeitor. As a necessary distinction, each set is colored in a different way; one commonly being White, the other Red, or Black. The pieces are named as follows: King, Queen, Bishops, Knights, Rooks, Pawns.

Every player is provided with one King, one Queen, two Bishops, two Knights, and two Rooks, besides the eight Pawns.

In placing the board, care must be taken that a White corner square be at the right hand of each player. It should also be observed that the Queen must be placed upon a square of her own color.

The Pieces: Their Powers and Mode of Action.

THE KING can move in any direction—forward, backward, sideways, or diagonally, provided always, of course, that he does not move into check. The King possesses one great prerogative—that of *never being taken;* but by way of counterbalancing the advantage of this exemption, he is restrained from exposing himself to *check*. He can move only one square at a time, except when he *castles*, which he may do once during each game. He may then move two squares. He cannot *castle* when in *check*, nor after he has once moved, nor with a Rook that has been moved, nor if any of the squares over which he has to move be commanded by an adverse piece.

THE QUEEN can move either horizontally or diagonally. She combines the powers of the Bishop and the Rook. She can, at one move, pass along the whole length of the board, or, if moving diagonally, from corner to corner. Although she can move and take in the same manner as a Bishop, or as a Rook, she must make the whole of one move in one direction, and cannot combine *in one move* the powers of these two pieces; she cannot move round a corner at one step.

The Rook (sometimes called the Castle) may pass along the entire length of the board at one move. It may move backwards, or forwards, or sideways—but always horizontally, never diagonally.

The Bishop can move only in a diagonal direction, but can go any number of squares, from one to eight, or as far as the space be open. The Bishop can never change the color of his square. Thus, the White King's Bishop being on a White square at the beginning, remains so throughout the game. This is a necessary consequence of his move being purely diagonal.

The Knight has a power of moving which is quite peculiar and rather difficult to explain. He moves two squares at once, in a direction partly diagonal and partly straight. He changes the color of his square at every move. The Knight is the only piece that possesses what is styled the "vaulting motion." He is not precluded from going to a square between which and his own other pieces intervene.

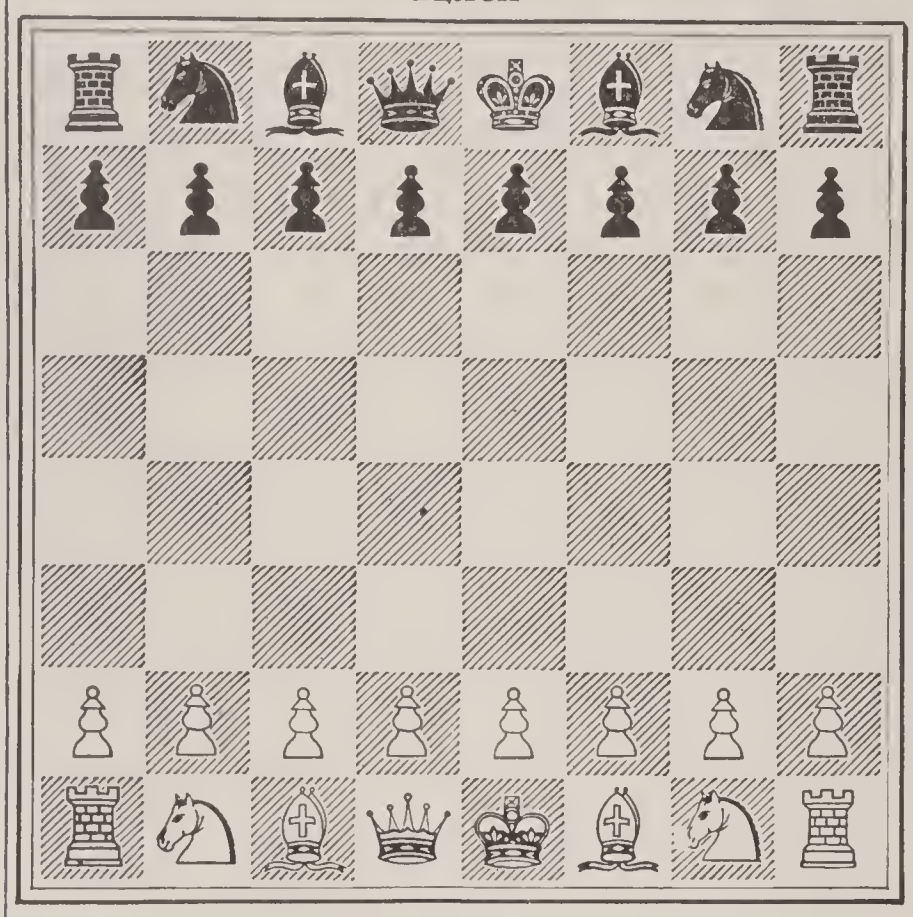
Thus, instead of moving your King's Pawn two, as your first move, you might, if good play permitted it, move out either of your Knights right over the row of Pawns in front. This power is possessed by the Knight alone, all the other pieces being obliged to wait until there is an opening in front of them before they can emerge. The Knight can move over the sixty-four squares of the board in as many moves. There are many ways of doing this, but Euler's solution, unlike most others, is based on mathematical calculation, and is not a mere experiment.

The Pawn moves in a straight line towards the adverse party. It cannot move out of its file except in capturing one of the opposing Pawns, or pieces, when it steps one square in a diagonal or slanting direction, and occupies the square of the captured piece. It can only be moved one square at a time, excepting in the first move, when the player has the option of advancing it two squares. The Pawn is the only piece which cannot retreat, and which does not take in the direction in which it moves. For full explanations relative to "Queening the Pawn," and taking a Pawn *en passant*, see instructions on those points.

Abbreviations.

The abbreviations which are invariably used in Chess publications are the following:

BLACK.



WHITE.

ORDER OF THE MEN ON THE BOARD.

K. for King; Q. for Queen; B. for Bishop; Kt. for Knight; R. for Rook; P. for Pawn; Sq. for Square; and Ch. for Check. The pieces on one side of the board are distinguished from those on the other in the following manner:

Those on the same side as the King are named after him, as K.'s B. (King's Bishop); K.'s Kt. (King's Knight); K.'s R. (King's Rook); while those on the same side as the

Queen are named Q.'s B. (Queen's Bishop); Q.'s Kt. (Queen's Knight); Q.'s R. (Queen's Rook). The Pawns are distinguished in like manner. The Pawn occupying the square in front of the King's B. is called the K.'s B.'s P.; that in front of the K.'s Kt. is called the K.'s Kt.'s P.; that in front of the Q.'s R. is called the Q.'s R.'s P., etc.

Technical Terms Used in the Game.

THE MOVE.—Whichever player opens the game by making the first move, is said to have "the move."

CHECK.—When your King is attacked by any piece, he is said to be in *check;* and it is your opponent's duty to give you warning of such an event by crying "check," when he makes the move. You must then put your King out of check by moving him, by taking the checking piece, or by interposing one of your own men between the checking piece and your King, thus "covering" check, as it is termed.

CHECKMATE is the term used when the King is in inextricable check—*i. e.*, when none of the above means avail to place him beyond the range of the attacking pieces. When a checkmate is obtained, the game is at an end, that being the sole object.

DISCOVERED CHECK is when the player moves a Pawn or piece from before another piece, thereby opening or "discovering" check—*e. g.*, the Black Rook may be on a line with the opposing King, the only intervening piece being a Black Pawn. The removal of this Pawn "discovers check."

DOUBLE CHECK is when check is discovered as above, the King being also attacked by the piece moved.

PERPETUAL CHECK is when the King of one of the players can be checked almost at every move, and when he has little else to do but move out of check. When the game has reached this stage, the weaker player may demand that checkmate shall be given in a certain number of moves, in default of which it may be declared a drawn game. (See Rule VIII.)

DRAWN GAME.—A drawn game may arise from several causes: 1. *As above.* 2. *Stalemate.* (See "Stalemate.") 3. *Equal play:* "Between very good players" (remarks Philidor), "it sometimes happens that the equipoise in force and position is constantly sustained in the opening, in the intermediate stages, and in the last result; when either all the exchangeable pieces have been mutually taken, or the remaining forces are equal—as a Queen against a Queen, a Rook against a Rook, with no advantage in position, or the Pawns are mutually blocked up." 4. *Absence of mating power—i. e.*, when neither player possesses the force requisite to obtain a checkmate. (See "Mating Power.") 5. *Unskilful use of a sufficiently strong force:* If one player is superior in force to his adversary, and possesses the requisite mating power, the game may still be drawn by the unskilful use of that superiority. If he cannot effect a checkmate in fifty moves it may be declared a drawn game.

STALEMATE describes that state of the game when one of the players has nothing left but his King, which is so placed that, although not in check, he cannot move without going into check.

CASTLING is a double operation, accomplished by moving the King and one of the Rooks at the same time. When the removal of the Bishop and the Knight on the one side, or of the Bishop, Knight and Queen on the other, has cleared the intervening squares, the King may *castle* with either of his Rooks. If it should be done on the King's side of the board, the King is to be placed on the Knight's square, and the Rook on the

Bishop's; if in the Queen's section, the King must be moved to the Bishop's square, and the Rook to the Queen's.

In other words, the King, in either case, must move two squares, and the Rook be placed on the opposite side of him to that on which he stood before. It is universally laid down that the King shall not castle when in check, nor when he has previously moved, nor with a Rook that has moved, nor if a square over which he has to pass be commanded by an adverse piece.

En Prise.—A piece is said to be *en prise* when under attack.

En Passant (*in passing*).—If your adversary has advanced one of his Pawns to the fifth square, and you move one of your Pawns in either of the adjoining files two squares, he is entitled to take your Pawn, *en passant*, as though you had only moved it one square. This peculiar mode of capture can only be effected by Pawns.

Ranks and Files.—The lines of squares running from left to right are known as *Ranks*, and those perpendicular to them, running from one player to the other, are called *Files*.

Passed and Isolated Pawns.—A Pawn is said to be "passed" when it is so far advanced that no Pawn of the adversary's can oppose it. An Isolated Pawn is one that stands alone and unsupported.

Double Pawn.—Two Pawns on the same file.

"J'adoube" (signifying *I adjust*, or *I arrange*) is the expression generally used when a player touches a piece to arrange it without the intention of making a move. Perhaps it is not absolutely necessary that he should say "*J'adoube*," but he must at any rate use an equivalent expression.

To Interpose.—This term explains itself. If your King or one of your pieces is attacked, and you move another of your pieces between the attacking piece and the piece attacked, either for the purpose of covering check, or as a means of protection, or with any other object, you are said to "interpose."

Winning the Exchange.—You are said to "win the exchange" when you gain a Rook for a Bishop, a Bishop for a Knight, or, in short, whenever you gain a superior piece by giving an inferior.

Queening a Pawn.—You are said to "Queen a Pawn" when you advance it to the eighth square on the file. You may then claim a Queen, or any other piece, in exchange for it. Formerly the rule was that you might substitute for it any piece you had previously lost, but, according to the modern game, three or more Rooks, or Bishops, or Knights, may be obtained in this way.

Gambit.—This term, which is derived from the Italian, describes an opening in which a Pawn is purposely sacrificed at an early stage of the game, in order subsequently to gain an advantage. Several Gambits are distinguished by the names of their inventors, such as the Cochrane Gambit, the Muzio Gambit, the Salvio Gambit, etc. There are also the Bishop's Gambit, the Queen's Gambit, etc., etc.

Mating Power.—The force requisite to bring about a checkmate: a King and Queen against King and two Bishops, King and two Knights, King and Bishop and Knight, or against King and Rook, can effect checkmate. King and two Bishops can mate against King and Bishop, or King and Knight. King, with two Bishops and Knight, can mate against King and Rook. King, with Rook and Bishop, can mate against Rook and King. King can always draw against King and Bishop, or King and Knight. King and

Rook against either a King and Bishop, or King and Knight, makes a drawn game, etc.

Laws of the Game.

The following "laws" are in force in all the principal clubs in this country :

I.—If a player touch one of his men, unless for the purpose of adjusting it, when he must say "*J'adoube*" (*see* Law IV.), or it being his turn to move, he must move the piece he has so touched.

[Walker gives the following remarks on this law—"When you touch a piece with the *bona fide* intention of playing it, the saying '*J'adoube*' will not exonerate you from completing the move. A Chessplayer's meaning cannot be misunderstood on the point ; and were it otherwise, you might hold a man in your hand for five minutes, and then saying '*J'adoube*' replace it, and move elsewhere!"]

II.—If the men are not placed properly at the beginning of the game, and this is discovered before four moves have been made on each side, the game must be recommenced. If the mistake should not be found out till after four moves have been made, the game must be proceeded with.

III.—Where the players are even, they must draw lots for the first move, after which they take the first move alternately. When a player gives odds, he has the option of making the first move, and the choice of men in every game.

[In giving odds, should it be agreed upon to give a Pawn, it is customary to take the K. B. P. If a piece is to be given, it may be taken from either the King's or Queen's side.]

IV.—If a player should accidently or otherwise move or touch one of his men without saying "*J'adoube*," his adversary may compel him to move either the man he has touched or his King, provided the latter is not in check.

V.—When a player gives check, and fails to give notice by crying "Check," his adversary need not, unless he think proper, place his King out of check, nor cover.

[If it is discovered that the King is in check, and has been so for several moves past, the players must move the men back to the point at which they stood when check was given. If they cannot agree as to when check was first given, the player who is in check must retract his last move, and defend his King.]

VI.—The player who effects checkmate wins the game.

VII.—Stalemate constitutes a drawn game.

VIII.—If, towards the end of the game, one of the players has what is called the "mating power," his adversary may demand that checkmate shall be given in fifty moves. If this is not accomplished, it shall be declared a drawn game.

IX.—The operation of "Castling" cannot be effected when the King is in check, nor when the King or Rook has been previously moved, nor when the space be not clear between the King and Rook, nor when any of the squares over which the King has to pass are commanded by the adversary.

X.—So long as you retain your hold of a piece you may move it where you will.

[Great dissatisfaction is sometimes caused by the latitude which this law allows. It has often been said that this law would be improved if it were made compulsory to move the piece in the direction in which it had been inclined, and that when it has been rested on a particular square it should remain there, and the move considered complete. "To finger the squares of the board whilst planning your move is strictly legal, but a most villanous habit."]

XI.—No limit is fixed to the time allowed for the consideration of each move. Where great delay occurs, a third party may be appealed to; and if he should pronounce the delay vexatious, the player refusing to move loses the game.

[This is a necessary law, but it would often be desirable to come to a mutual agreement as to the time beforehand. No greater bore can be imagined than an excessively cautious player. In matches of consequence the time is generally stipulated.]

XII.—Should you move one of your adversary's men instead of your own, he may compel you to take the piece you have touched, should it be *en prise*, or to replace it and move your King; provided, of course, that you can do so without placing him in check.

XIII.—Should you capture a man with one that cannot legally take it, your adversary may compel you either to take such piece (should it be *en prise*) with one that *can* legally take it, or to move the piece touched; provided that by so doing you do not discover check, in which case you may be directed to move your King.

XIV.—Should you move out of your turn, your adversary may compel you either to retract the move, or leave the piece where you placed it, as he may think most advantageous.

XV.—If you touch the King and Rook, intending to Castle, and have quitted hold of the one piece, you must complete the act of Castling. If you retain your hold of both, your adversary may compel you to move either of them.

XVI.—The game must be declared to be drawn should you fail to give checkmate in fifty moves, when you have

King and Queen against King
King and Rook "
King and 2 Bishops against King.
King, Bishop, and Kt. "
King and Pawn "
King and 2 Pawns "
King and minor piece "

XVII.—Drawn games of every description count for nothing.

XVIII.—Neither player may leave a game unfinished, nor leave the room without the permission of his adversary.

XIX.—Lookers-on are not permitted to speak, nor in any way express their approbation or disapprobation while a game is pending.

XX.—In case a dispute should arise on any point not provided for by the laws, a third party must be appealed to, and his decision shall be final.

Comparative Value of the Pieces.

The Pawn is always accounted the lowest in value. Its importance, however, like that of all the other pieces, changes as the game progresses. Towards the end of a game its value is considerable.

The Knight is of more value in the first attack than in the final struggle. It loses force as the game proceeds. In certain situations the Knight is of incomparable value. Its peculiar *vaulting* power gives it considerable importance in complicated positions. Walker considers it of equal value with the Bishop.

The Bishop.—Mr. Walker gives a list of the advantages which the Bishop and Knight possess over each other, and sums up by expressing it as his opinion, "founded on practical experienee, that the Bishop is superior to the Knight only in imagination; and that the two pieces should be indiscriminately exchanged by the learner, as being of strictly equal value in cases of average position." Most other authorities, however,

maintain that the Bishop is, upon the whole, slightly superior to the Knight.

The Rook is reckoned to be about equivalent to a Bishop and two Pawns, or a Knight and two Pawns. It is seldom called into active play at the commencement of a game, but it gradually rises in importance, till towards the close it may almost be said to command the game. In actual play, it is probably oftener instrumental in giving checkmate than any other piece. With the King, a Rook can mate against a King—a power possessed by no piece besides the Queen.

The Queen decreases in power as the game proceeds. Throughout, however, she holds by far the first position in value.

The King, though seldom of much use for purposes of attack at the beginning, acquires considerable force as the game becomes narrowed. His power of moving in any direction, and attacking any piece besides the Queen, is often of great value.

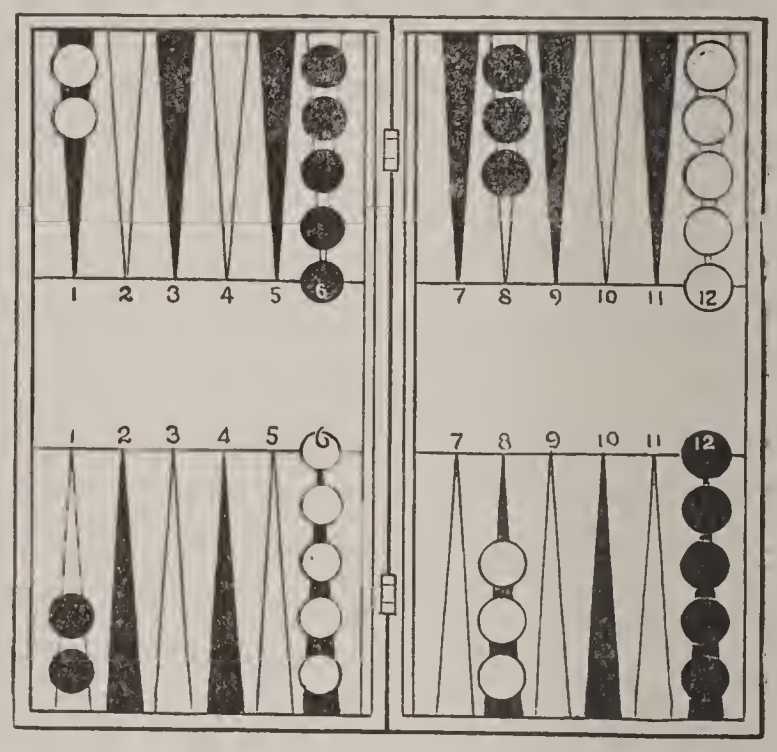
The plan of comparing, by means of figures, pieces of which the value varies so considerably, is obviously somewhat impracticable, and the estimate cannot in all cases be relied on. To the learner, however, it may be of some service in conveying to him a vague idea of their relative value. Suppose the Pawn to stand as 1; the value of the Knight may be estimated at rather more than 3; that of the Bishop rather less than 4; that of the Rook at about 5; and that of the Queen at about 7½.

BACKGAMMON.

The game of Backgammon is allowed on all hands to be the most ingenious and elegant game next to chess. The word is Welch, and signifies *littlebattle*. The origin and antiquity of the game has been accordingly ascribed to the Cambro Britons, although it is claimed also by the French and Spaniards.

This game is played with dice by two persons, on a table divided into two parts, upon which there are twenty-four black and white spaces, called points.

Each player has fifteen men, black and white to distinguish them. If you play into the left-hand table, two of your men are placed upon the ace point in your adversary's inner table; five upon the sixth point in his outer table; three upon the cinque point in your own outer table; and five upon the sixth point in your own inner table, and the adversary's men are to be placed so as to correspond with yours in a directly opposite position.



The object of the game is to bring the men round to your own "home," or inner table; consequently, all throws of the dice that tend to this, and impede your adversary in executing the same design on his part, are in your favor. The first most advantageous throw is aces, as it blocks the sixth point in your outer table, and secures the cinque point in your inner table, so that your adversary's two men upon your ace point cannot escape with his throwing either quatre, cinque or six. Accordingly, this throw is often asked and given between players of unequal skill by way of odds, and is considered only fair.

Hoyle's Instructions.

1. If you play three up, your principal object in the first place is either to secure your own or your adversary's cinque point. When that is effected you may play a pushing game, and endeavor to gammon your opponent.

2. The next best point (after you have gained your cinque point) is to make your bar-point, thereby preventing your adversary running away with two sixes.

3. After you have proceeded thus far, prefer making the quatre point in your own table, rather than the quatre point out of it.

4. Having gained these points, you have a fair chance to gammon your adversary if he be very forward. For suppose his table to be broken at home, it will be then your interest to open your bar-point, to oblige him to come out of your table with a six, and having your men spread, you not only may catch that man which your adversary brings out of your table, but will also have a probability of taking up the man left in your table, upon the supposition that he had two men there. And if he should have a blot at home, it will be then your interest not to make up your table, because if he should enter upon a blot which you are to make for the purpose, you will have a probability of getting a third man, which, if accomplished, will give you at least four to one of the gammon; whereas, if you have only two of his men up, the odds are that you do not gammon him.

5. If you play for a hit only, one or two men taken up of your adversary's makes it surer than a greater number, provided your table be made up.

Techanical Terms.

BACKGAMMON.—The entire game won.

BAR.—The division between the two sections of the board.

BAR-POINT.—The point adjoining the bar.

BEARING YOUR MEN.—Removing them from the table after bringing them home.

BLOT.—A single man upon a point.

DOUBLETS.—Two dice bearing the same number of pits.

GAMMON.—To win a gammon is to win two out of the three points constituting the game.

HIT.—To remove all your men before your adversary has done so.

HOME.—The inner table.

MAKING POINTS.—Winning hits.

TO ENTER.—To enter is to place a man again on the board after he has been excluded on account of a point being already full.

Laws of the Game.

Hoyle appends the following laws of the game to his treatise:

1. If you take a man or men from any point, that man or men must be played.

2. You are not understood to have played any till it is placed upon a point and quitted.

3. If you play with fourteen men only, there is no penalty attending it, because with a lesser number you play to disadvantage, by not having the additional man to make up your tables.

4. If you bear any number of men before you have entered a man taken up, and which consequently you were obliged to enter, such men, so borne, must be entered again in your adversary's tables, as well as the man taken up.

5. If you have mistaken your throw, and played it, and your adversary have thrown, it is not in your or his choice to alter it, unless both parties agree.

These laws of the game are simple and easily learned, and, moreover, Backgammon is one of the most diverting games for the home circle or an evening's pleasant amusement.

COMPARATIVE Face Reading . PHYSIOGNOMY

THE study of character and its indications is as old as human inquiry, and therefore the tendency of mind in this direction must arise from a special mental trait. The changing expression of the face is everywhere regarded as a mirror in which the passing thought or present emotion can be seen.

If one be long afflicted by grief or blessed by joy, wearied by trouble or vexed with care, shadowed with melancholy or excited by wit, inspired by faith or led by conscience, inflated by pride or subjected to its domination, the emotions awakened by these different states and revealed in the face, may become so far fixed as to defy concealment. But let one's circumstances be suddenly changed; let grief be turned to joy, and trouble, care, and vexation will fade from the countenance and leave scarcely a trace.

Then there are expressions of face inherited from joyous or sorrowing parentage. In the same family one child absorbs the sunshine of its mother's joy, and it glows from its face for a lifetime; another, if circumstances have changed, will wear the tear marks, or the expression of bitterness that darkened the mother's life; and no doubt the brain as well as the face will bear a similar and even more permanent record.

The very attitudes and motions assume, by long habit, an expression of the inner life. One accustomed to the exercise of authority gets a stiffer spine, a more exalted head, and firmer lines of the face, and the brain conforms in development and activity to the conditions that have become habitual.

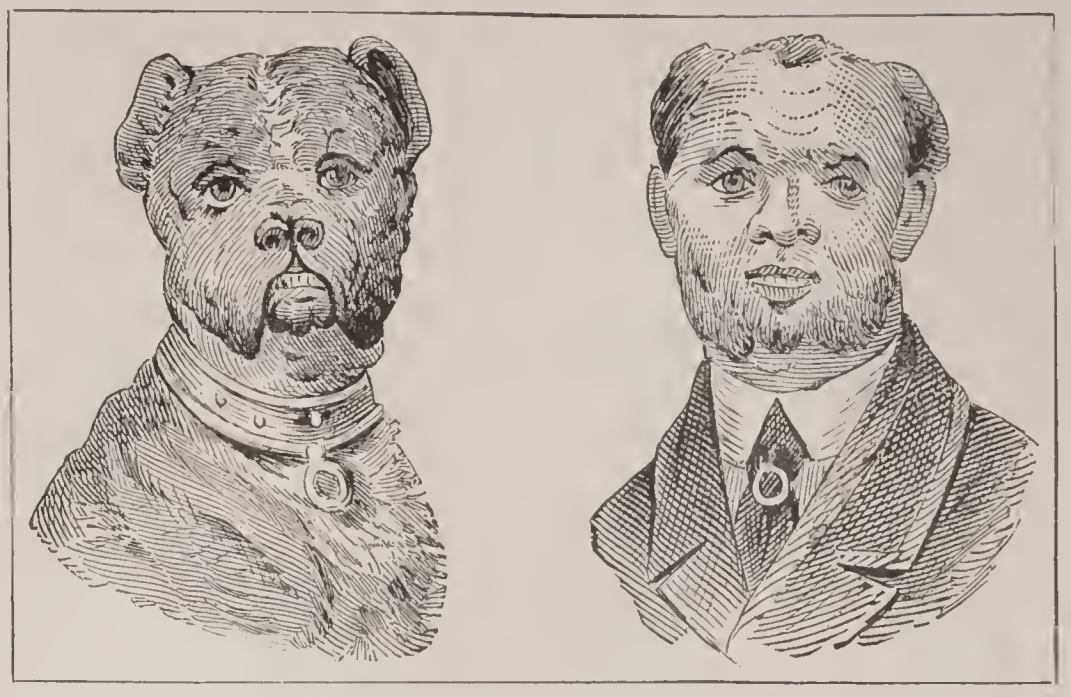
For centuries the face has been studied, and attempts have been made to reduce the face to a science with greater or less approaches to success. People will study the face and its expression and be influenced by it without having any science or rules for it, or any means of explaining it. Yet their impressions will be correct.

Likeness Between Men and Animals.

It is interesting to note the very striking facial resemblance between men and some of the animals, as shown in the accompanying engravings. The animal world appears to have been created on one general plan, and types of face and features among the lower orders are constantly reproduced among the higher.

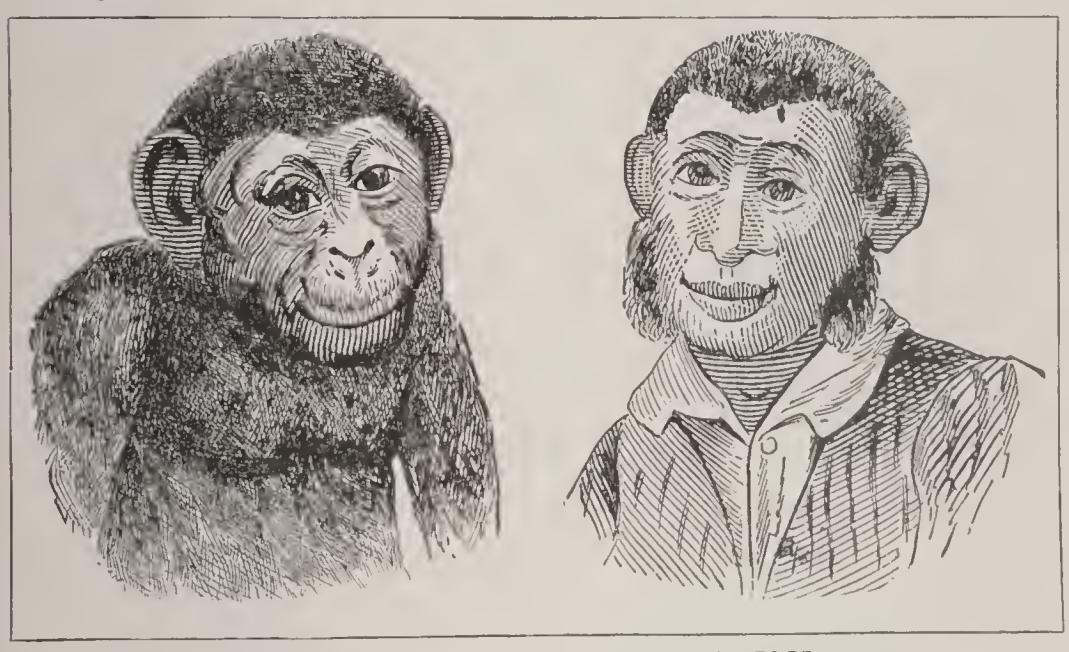
Near the close of the last century the physiology of the brain became the subject of special investigation by an eminent physician of Germany, Dr. Gall, and he claimed that he had discovered signs of character in the brain, that it can be safely studied as the basis of character, and that whatever the face or attitudes or motions may reveal, the impulse comes from the brain. His mode of investigation has acquired the name of Phrenology.

For nearly a hundred years the term Phrenology has been before the world, and has been understood to relate to the laws and activities of the human mind, and that in some way it is related to the brain as its organ. A few have studied Phrenology and accepted it heartily; others have made it a topic for contempt or ridicule, and, though thousands of the general public have little or no knowledge on the subject, other thousands have more or less information respecting it, and, so for as they understand it, they believe and accept it.



A STRIKING PAIR.

A brief outline of the doctrines of Phrenology may here be made:



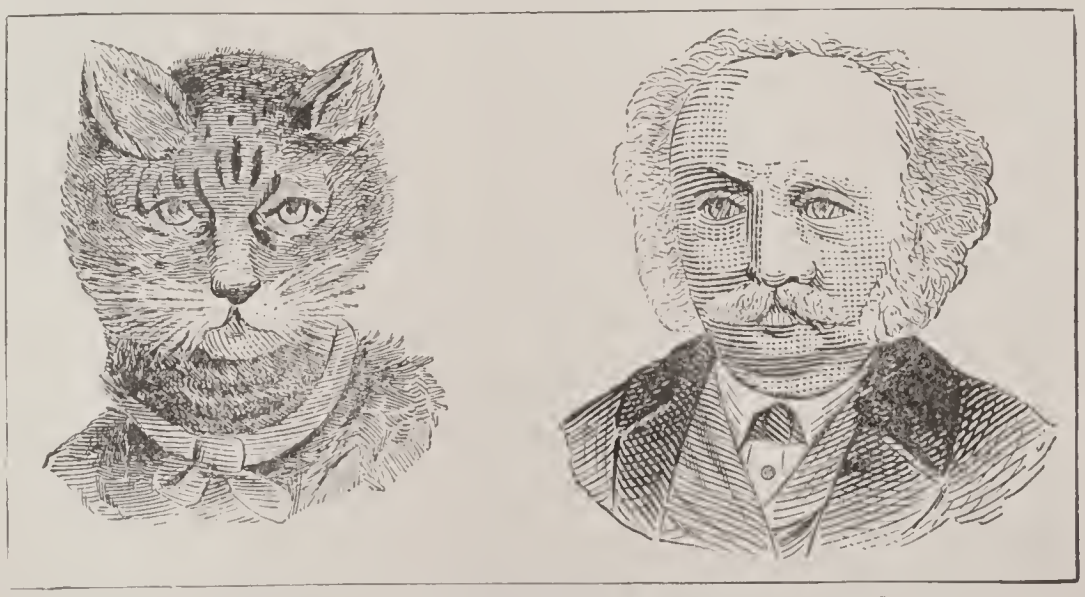
APE. APISH.

First. The brain is the organ or instrument of the mind, just as the eye is the instrument of sight. Every trait of character, every talent, propensity, or sentiment has its organ.

There is a general belief that somehow the *intellect* stands related to the brain, and when an injury to any part of that viscus occurs, the newspapers will say that the intellect was, or was not, affected by the injury. But a doubt exists whether the brain is also the seat of the feelings and the propensities.

To say that some injury of the brain did not affect the intellect, is about as definite as it would be to say that a man was injured in the head, but that his eye-sight, or his smelling power, or his hearing was not affected, and therefore eye-sight and hearing do not necessarily belong to the head; but Phrenology teaches that every sentiment, every element of taste and aversion, of hope and fear, of love and hatred, as well as the *intellectual faculties* and *memory*, have their special seats in some part of the brain.

Second. The mind is not a single power, but has many faculties, some of which may be stronger or weaker than the others in the same person; from which arises the great variety of character.



"PUSS, YOU REMIND ME OF ——."

Third. Each faculty or propensity of the mind has its special organ in the brain.

Fourth. Size of brain, the quality being good, is the true measure of its power. The



OWL. OWLISH.

brain, when deficient in size or low in quality or health, is always connected with a low degree of mental power. Even among the lower animals the brain is found to be large and complicated in proportion to the variety and strength of their faculties.

Fifth. There are several groups of faculties, and each of these groups is represented by organs located together in the brain. The organs of the intellect are situated in the forehead in what are called the *anterior lobes* of the brain; those of the social nature in the back head, or *posterior lobes* of the brain; those of passion, appetite, and self-preservation, in the side head, or *middle lobes* of the brain; while those organs which manifest aspiration, pride, ambition, are in the crown of the head, and those of sentiment, sympathy, morality and religion in the top head.

Sixth. Each faculty of the mind, each sentiment and propensity, has its own organs, as each function of the body has its specific organ. If this were not so, each person would manifest the same amount of talent or power on all subjects, such as arithmetic, language, music, mechanism, the power of reasoning, love of property, courage, prudence or pride. Everybody knows that persons rarely ever show equal talent on all topics, and that a man may be a genius at one thing and find it impossible, by long training, to become even tolerably successful in other things. If the mind were a single power and the brain a single organ this would not be the case.

The senses of seeing, hearing, tasting, smelling, are not always possessed by each person in an equal degree of perfection, these several powers being dependent on different organs, and each related to a special part of the brain; so the mental faculties and dispositions are alike unequal in a given person, owing to the greater strength or weakness of their respective organs in the brain; hence some people represent partial genius, others partial idiocy or partial insanity, and these facts are explained and sustained only by the phrenological theory of the mind.



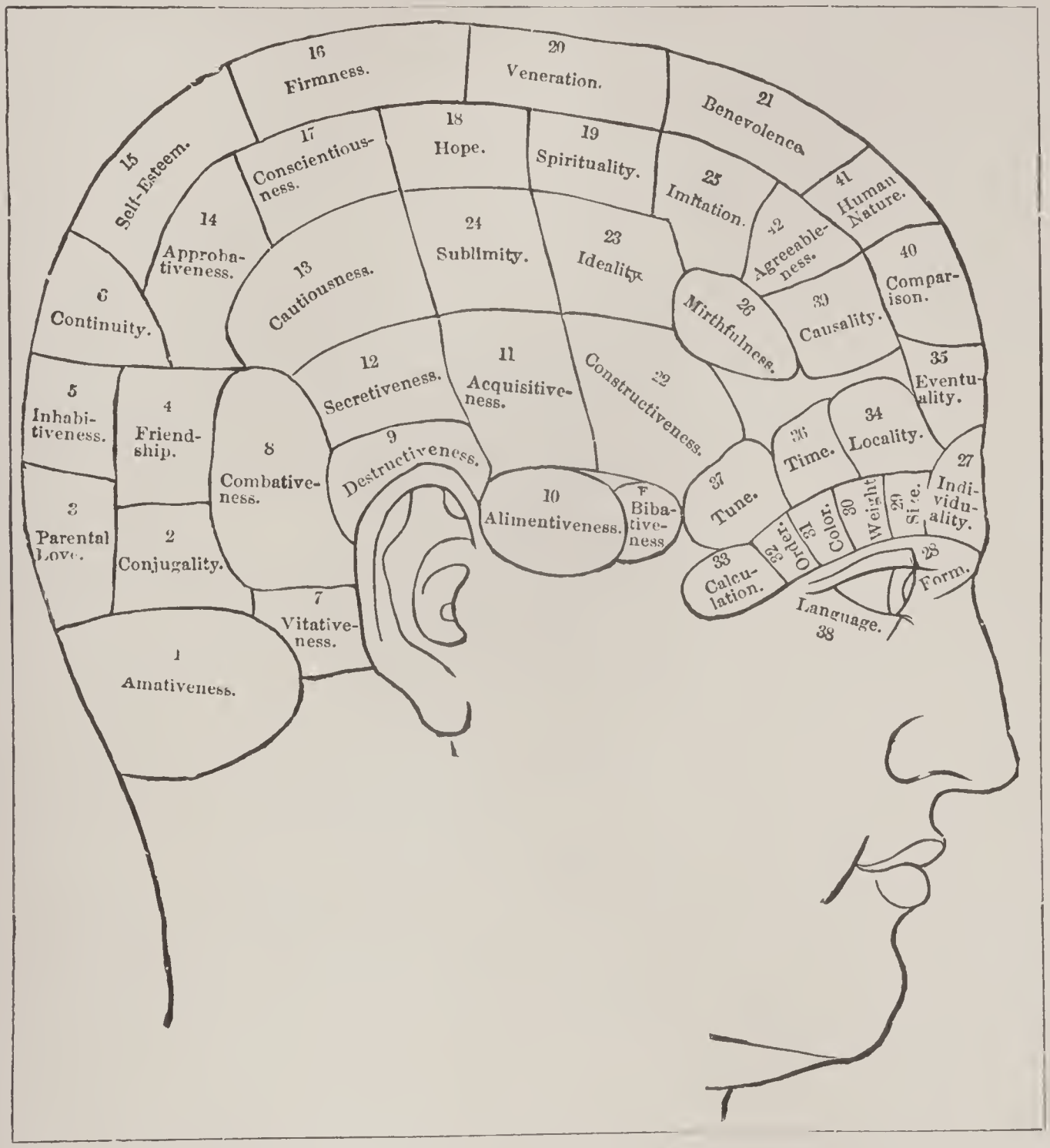
MARKED RESEMBLANCE.

Seventh. The Quality and Temperament of the organization determine of the degree of vigor, activity and endurance of the mental powers.

Temperament is indicated by external signs, including the build, complexion and texture. Men recognize different qualities in their judgment of horses, cattle and other stock, although they do not use the terms we apply to mankind. Men who deal in timber know that the quality of different kinds of wood has infinite variety; the spongy palmetto of the South, the soft texture of the willow, or the coarse character of the hemlock in contrast with oak, hickory, ebony, lignum vitæ, showing that contrasts of temperament or quality in wood are various.

To a critical phrenologist and physiognomist as wide a range of quality may be found in the human race. Speed, activity, strength, endurance in birds and horses are recognized and understood. The trim, compact game-chicken that weighs five pounds finds little difficulty in vanquishing the clumsy, coarse and tall Shanghai or Chittagong that may turn the scales at fourteen pounds; and temperament is a term which, rightly understood, explains the reason of these peculiarities.

A practical knowledge of Phrenology is considered by many persons of great assistance in deciding what occupation a young man or woman should follow.



LOCATION AND DESCRIPTION OF THE ORGANS AS FIXED BY PHRENOLOGISTS.

CURIOUS FACTS

THINGS NOT GENERALLY KNOWN

ALPS, THE.—These mountains comprise about 180 peaks, from 4,000 to 15,732 feet high, the latter being the height of Mont Blanc, the highest spot in Europe. The summit is a sharp ridge, like the roof of a house, consisting of nearly vertical granite rocks. The ascent of these awful solitudes is most perilous, owing to the narrow paths, tremendous ravines, icy barriers, precipices, etc.

In many places every step has to be cut in the ice, the party being tied to each other by ropes, so that if one slips he may be held up by the rest, and silence is enforced, lest the noise of talking should dislodge the avalanches of the Aiguille du Midi. The view from the mountain is inexpressibly grand.

On the Alps, the limit of the vine is an elevation of 1,600 feet; below 1,000 feet, figs, oranges and olives are produced. The limit of the oak is 3,800 feet, of the chestnut 2,800 feet, of the pine 6,500 feet, of heaths and furze to 8,700 and 9,700 feet, and perpetual snow exists at an elevation of 8,200 feet.

ALCOHOL—WHO DRINKS IT?—It has been the endeavor of the census-takers, in 1890, to obtain, as far as possible, such facts as relate to the use of *alcohol as a beverage*. It appears that alcohol, as such (in some cases diluted with water, but without any coloring or extraneous flavoring), is used by a certain foreign element of our population. It is drunk to a great extent by Poles, Norwegians, Swedes, Finns, Hungarians and Russians. The quantity thus consumed is larger than is generally supposed.

Inquiry of some of the large houses in the Northwest, familiar with this particular trade, elicits the information that fully one-half of the alcohol sold in that section is drunk, it being the favorite beverage of these foreign races. It is estimated, by competent authority, that about fifteen barrels of alcohol are daily consumed for that purpose in New York city alone. A considerable amount is consumed by the same element in the coal regions of Pennsylvania, and undoubtedly in other localities.

BODY, THE HUMAN.—The average height of a newly-born infant is 18 inches; average weight, 6.77 lbs. The average weight of the newly-born male child is 7⅓ lbs., of the female child 6⅔ lbs. It takes 3 years for the child to grow the second 18 inches, so as to be 3 feet high.

Average weight of adult male, 145 lbs.; height, 5 ft. 7 inches; chest measurement of male, 36 inches; drawing strength between hands, 75 lbs.

The skeleton is one inch shorter than the measurement of the living person—skeleton weighs about 14 lbs.—there are 240 bones. The body contains about 12 lbs. of blood; about 6⅓ ozs. pass through the heart in each beat, and in adults from 65 to 75 beats occur per minute. All this passes through the lungs and is revivified by the oxygen of the air—as bright red blood goes by the subdivision of the arteries to every minutest portion of the body, and returns laden with impurities as dark venous blood through the veins to the heart again.

The heart is a little larger than the fist, and weighs about 9 to 11 ozs.

The adult male brain weighs 49 to 50 ozs., female 44 to 45 ozs.; the nerves of motion and sensation from every portion of the body end in the brain and spinal cord.

The lungs consist of about 174 million sacs or cells at the end of minute tubes that unite to form larger tubes, and these form the two bronchial tubes, and these unite in the windpipe, opening into the mouth and nose. At each breath the lungs are filled with air, the purpose of which is to oxygenate the blood. The blood absorbs about 30 ozs. of oxygen per day, sufficient to consume in the tissues of the body the carbon from about 3 lbs. of bread. The utmost amount of air expirable at one breath is calculated at 200 to 250 cubic inches.

The stomach lies beneath the lungs, near the centre of the body, and is a sac of a capacity of about a pint (without distension), in which the food is changed by the digestive juices and ferments.

The liver, to the right, and beneath the stomach, weighs 50 to 60 ozs.; it changes the starch of foods to sugar, secretes bile, and otherwise aids in digestion.

Spleen, to left of stomach, about the size of fist, weighs 5 to 7 ozs.; functions undetermined.

The intestines, about 34 feet in length ; the digestion of the food and the absorption of its nutrient qualities into the lacteals and the blood is completed in the intestines.

The two kidneys weigh each about 4½ ozs.; about 1,000 ozs. of blood passes through them in an hour, and by them the waste fluid portions of the food not useful to the blood are strained out. The waste fluids of the body are also exuded through the pores of the skin. The area of the surface of the body is about 2,500 square inches, it contains about 7,000,000 pores, each about ¼ of an inch long, or a total length of nearly 28 miles of pores.

The secretions of the body, saliva, gastric juice, chyle, bile etc., which are absorbed from the blood and reabsorbed by it in twenty-four hours, amount to 25 lbs. Adults require eight or nine hours' sleep.

CALLED OVER THE COALS.—Originally "hauled over the coals," derived from the ordeal by fire in early days, one form of which consisted in making the accused walk over burning coals. This method of persuasion was often employed to get money from Jews by the kings and barons of early centuries.

CITIES, FICTITIOUS NAMES OF.—Aberdeen, Scotland, Granite City.

Alexandria, Egypt, Delta City.

Alton, Ill., Tusselburgh.

Akron, O., Summit City.

Baltimore, Md., Monumental City.

Birmingham, O., Bran Town.

Boston, Mass., Puritan City; Modern Athens; Hub of the Universe; City of Notions; Athens of America; The Hub.

Brooklyn, N. Y., City of Churches.

Buffalo, N. Y., Queen City of the Lakes.

Cairo, City of Victory.

Cincinnati, O., Queen City; Porkopolis; Queen of the West; Paris of America.

Chicago, Ill., Garden City.

Cleveland, Forest City.

Dayton, O., Gem City of Ohio.

Detroit, Mich., City of the Straits.

Duluth, Minn., Zenith City.

Edinburgh, Scotland, Maiden Town; Northern Athens; Modern Athens; Athens of the North.

Gibraltar, Key to the Mediterranean.

Hannibal, Mo., Bluff City.

Havana, Cuba, Pearl of the Antilles.

Holyoke, Mass., Paper City.

Indianapolis, Ind., Railroad City.

Jerusalem, Palestine, City of Peace; City of the Great King.

Kansas City, Mo., Mushroomopolis.

Keokuk, Ia., Gate City.

Lafayette, Ind., Star City.

Limerick, Ireland, City of the Violated Treaty.

Lowell, Mass., City of Spindles; Manchester of America.

London, England, City of Masts; Modern Babylon.

Louisville, Ky., Falls City.

Madison, Wis., Lake City.

Milan, Italy, Little Paris.

Milwaukee, Wis., Cream City.

Minneapolis, Minn., City of Flour.

Nashville, Tenn., City of Rocks.

New Haven, Conn., City of Elms.

New Orleans, La., Crescent City.

New York, Gotham; Empire City; Metropolitan City.

Pekin, Ill., Celestial City.

Philadelphia, Pa., Quaker City; City of Brotherly Love; City of Homes.

Pittsburg, Pa., Iron City; Smoky City; Birmingham of America.

Portland, Me., Forest City.

Paterson, N. Y., Lyons of America.

Peoria, Ill., Whisky Town.

Quebec, Canada, Gibraltar of America.

Quincy, Ill., Gem City.

Racine, Wis., Belle City.

Rome, Italy, Eternal City; Nameless City; Queen of Cities; Seven-Hilled City; Mistress of the World.

Rochester, N. Y., Flour City.

St. Louis, Mo., Mound City.

St. Paul, Minn., Gem City.

San Francisco, Cal., Golden City.

Salem, Mass., City of Peace.

Salt Lake City, City of the Saints.

Springfield, Ill., Flower City.

Streator, Ill., City of the Woods.

Toledo, O., Corn City.

Venice, Italy, Bride of the Sea.

Washington, D. C., City of Magnificent Distances.

Winnipeg, Manitoba, Gate City of the Northwest.

DIXIE.—An imaginary place, somewhere in the Southern States of America, celebrated in a popular negro melody as a perfect paradise of luxurious ease and enjoyment. The term is often used as a collective designation of the Southern States.

EARTH'S CENTRE.—All bodies weigh less the further removed they are from the centre of the earth. A block of stone weighing 700 pounds upon the seashore, will weigh only 699 pounds if carried up a mountain three miles high. A pendulum oscillates more quickly at the poles than at the equator, because the earth is flatter by twenty-six miles at the poles—that is, the "bob" of the pendulum is that much nearer the earth's center, and therefore heavier, and so swings more quickly.

EL DORADO (*Spanish, the golden land.*)—A name given by the Spaniards to an imaginary country, supposed, in the sixteenth century, to be situated in the interior of South America, between the rivers Orinoco and Amazon, and to abound in gold and all manner of precious stones. Expeditions were fitted out for the purpose of discovering this fabulous region; and, though all such attempts proved abortive, the rumors of its existence continued to be believed down to the beginning of the eighteenth century.

"FLYING DUTCHMAN."—The name given by sailors to a spectral ship, which is supposed to cruise in storms off the Cape of Good Hope, and the sight of which is considered the worst of all possible omens. She is distinguished from earthly vessels by bearing a press of sail when all others are unable, from stress of weather, to show an inch of canvas. The cause of her wanderings is variously explained. According to one account, a Dutch captain, bound home from the Indies, met with long continued head-winds and heavy weather off the Cape of Good Hope, and refused to put back, as he was advised to do, swearing a very profane oath that he would beat round the cape if he had to beat there until the day of Judgment. He was taken at his word, and doomed to beat against head-winds all his days. His sails are believed to have become thin and sere, his ship-sides white with age, and himself and crew reduced almost to shadows. He cannot heave to or lower a boat, but sometimes hails vessels through his trumpet, and requests them to take letters home for him. The superstitution has its origin, probably, in the looming, or apparent suspension in the air, of some ship out of sight—a phenomenon sometimes witnessed at sea, and caused by unequal refraction in the lower strata of the atmosphere.

"GOLDEN AGE" AND "IRON AGE."—The Elizabethan was the *Golden Age* of England, the Victorian is the *Iron Age*, the *Silver Age* was the reign of Queen Anne. The first named period was noted for giants of literature, simplicity of manners, integrity of conduct, honesty of intention, and domestic virtues. The second is an age of commerce and hard matter-of-fact. The third was noted for elegant refinement, delicacy of speech, luxurious living, politeness, and artificial manners.

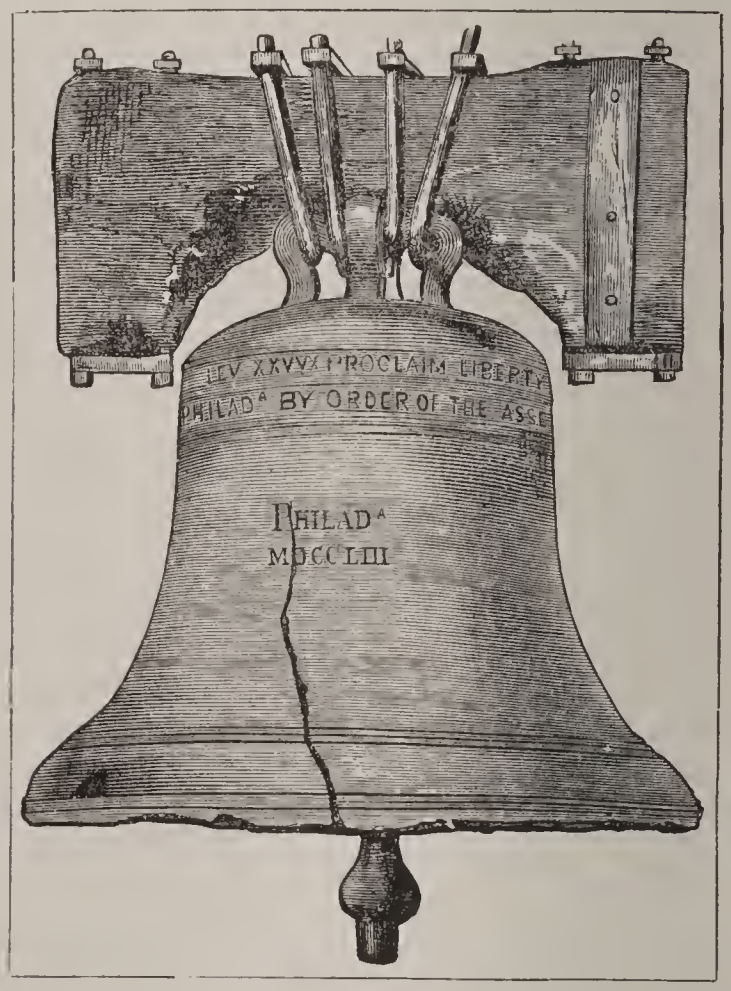
"GO TO HALIFAX."—Halifax law was, that the criminal should be "condemned first, and inquired upon after." Halifax also has the credit of inventing the rude guillotine of Maunaye, and easily became a place of terror to rogues. In the United States it is now used as a coarse expletive, Halifax, *i. e.*, Hell.

HOBSON'S CHOICE.—Tobias Hobson was the first in England who let out hackney horses. To each who applied, Hobson obliged him to take the horse which stood nearest the stable-door, hence the modern "Hobson's choice," meaning practically none. "Neck or nothing" commonly added was probably "Next or nothing."

JOHN BULL.—This nickname is derived from the satire of Dr. Arbuthnot, representing the Englishman under that name as a bluff, kind-hearted and bull-headed farmer. In the minds of some it is associated with Dr. John Bull, organist to Queen Elizabeth, and a celebrated musician.

"KICK THE BUCKET."—This term, meaning to die, alludes to the way in which a slaughtered pig is held up. The ends of a bent piece of wood, technically called a "bucket," are fastened behind the tendons of the hind legs in order to suspend the carcass. It has sometimes been said to have originated from a method of committing suicide by standing on a bucket, adjusting the noose and then kicking the bucket away.

LIBERTY BELL.—The order for the bell was given in 1751. The State House of Pennsylvania, in Philadelphia, work on which had been suspended for a number of years, was then approaching com-



THE OLD LIBERTY BELL.

pletion. The lower floors were already occupied by the Supreme Court in the chamber, while in the other assembled the Freemen of the Province of Pennsylvania, then consisting of one body. A committee was appointed by the Freemen, with Peter Norris as chairman, and empowered to have a new bell cast for the building. The commission for the

bell was in the same year awarded to Robert Charles, of London, the specification being that the bell should weigh about 2000 pounds and cost £100 sterling.

It was to be made by the best workmen, to be examined carefully before being shipped, and to contain, in well-shaped letters around it, the inscription: "By order of the Province of Pennsylvania, for the State House in the City of Philadelphia, 1752." An order was given to place underneath this the fatal and prophetic words from Leviticus xxv. 10: "Proclaim liberty throughout all the land, unto all the inhabitants thereof."

undertook to recast the bell, which, on being opened, revealed a bell which pleased very much. But it was also found to be defective. The original bell was considered too high, and a quantity of copper was added to the composition, but too much copper was added. There were a great many witticisms on account of the second failure, and the ingenious workmen undertook to recast the bell, which they successfully did, and it was placed in position in June, 1753.

On Monday, the 8th of July (not the 4th), at noon, true to its motto, it rang out the memorable



THE LAYMAN BOAT USED IN DUCK SHOOTING.

The reason for the selection of this text has been a subject of much conjecture, but the true reason is apparent when the full text is read. It is as follows: "And ye shall hallow the fiftieth year and proclaim liberty throughout the land and to all the inhabitants thereof." In selecting the text the good Quakers had in memory the arrival of William Penn and their forefathers more than half a century before.

In August, 1752, the bell arrived, but though in apparent good order, it was cracked by a stroke of the clapper while being tested. It could not be sent back, as the captain of the vessel who had brought it over could not take it on board. Two skillful men

message of "Liberty throughout the land and to all the inhabitants thereof."

For fifty years the bell continued to be rung on every festival and anniversary until it eventually cracked. This happened in July, 1835, when it was tolling for the death of Chief Justice John Marshall.

An ineffectual attempt was made to cause it to continue serviceable by enlarging the cause of its dissonance and chipping the edges. It was removed from its position in the tower to a lower story, and only used on occasions of public sorrow, such as the death of ex-Presidents and statesmen. Subsequently it was placed on the original timbers in the vestibule

of the State House, and in 1873 it was suspended in a prominent position immediately beneath where a larger bell presented to the city in 1866 now proclaims the passing hours.

MAN IN THE MOON.—A name popularly given to the dark lines and spots upon the surface of the moon, which are visible to the naked eye, and which, when examined with a good telescope, are discovered to be the shadows of lunar mountains. It is one of the most popular, and perhaps one of the most ancient superstitions in the world, that these lines and spots are the figure of a man leaning on a fork, on which he carries a bundle of thorns or brushwood, for stealing while on a Sunday he was confined in the moon. The account given in Numbers xv. 32 of a man who was stoned to death for gathering sticks upon the Sabbath-day, is undoubtedly the origin of this belief.

MONROE DOCTRINE.—In 1822, during the Presidency of James Monroe, the Spanish-American colonies having fought their way to independence as against Spain, they were recognized as an independent power by the United States. In his annual message to Congress in 1823, the President proclaimed the celebrated doctrine of non-interference, as follows: "That as a principle the American continents, by the free and independent position which they have assumed and maintained, are henceforth not to be considered as subjects of future colonization by any European power." This doctrine is attributed to Adams, who was Secretary of State under Monroe.



PASSAGE OF HELL GATE, EAST RIVER, N. Y., IN A LAYMAN BOAT.

Pneumatic Sporting Boat

THE cut on page 619 will give you a very good idea of its general construction. The upper or floating surface is divided into four compartments, separately inflated, any one of which will sustain one in the water, and so constructed that it can be neither capsized nor sunk under any reasonable conditions. It combines all the essential features of a perfect boat, being light, weighing but 18 pounds, conveniently carried, comfortable, impervious to air and water, and not liable to puncture.

The boat is provided with loops, carrying straps and rings inside and outside for all conveniences and

emergencies. In the loops around the outer edges wild rice or any other marine grain or plant may be placed so as to form a complete blind which will enable the sportsman to float down to a flock of ducks without his presence even being suspected. For this purpose there is a blind, mounted on netting, with supports so arranged as to fit perfectly in the loops of boat, made in two sections which completely envelop the boat, and these roll, when not in use, into a very small compass.

The air compartments are quickly and easily inflated, either by the lungs or, better and quicker, with any of the pumps listed. The total weight of boat is from 18 to 20 pounds, and when inflated occupies a space of 45 inches long by 32 inches in width. When deflated it folds into a very small space, about 16 x 20 inches, and can be conveniently carried under the seat of a buggy or wagon, in a boat, or carried safely packed in a trunk with other traps.

These pneumatic boats are more comfortable to sit in than any small boat in use; the position is that of sitting, the legs going into the boots from the knee down; this brings the entire weight on the under side and below the floating compartments, greatly increasing their stability and rendering them absolutely non-capsizable.

In the use of this boat you have no oars to contend with; there is no splash of the waters, leaves no wake, is entirely noiseless in its movements and gives perfect freedom to arms and body. The boots are sufficiently large to go over any shoe.

The boats have been practically tested under all possible conditions, in lakes, rivers and the open sea, and have been found safe in all waters and in all sorts of weather. They have proved themselves equal to all emergencies. Under ordinary conditions, two or three miles per hour can be comfortably covered. It is available for every purpose for which one goes into the water.

How Our Presidents Died

GEORGE WASHINGTON died from a cold, which brought on laryngitis; buried on his estate at Mount Vernon, Va.

2. John Adams died from senile debility; buried at Quincy, Mass.

3. Thomas Jefferson died of chronic diarrhœa; buried on his estate at Monticello, Va.

4. James Madison died of old age; buried on his estate at Montpelier, Vt.

5. James Monroe died of general debility; buried in Marble Cemetery, New York city.

6. John Quincy Adams died of paralysis, the fatal attack overtaking him in the House of Representatives; buried at Quincy, Mass.

7. Andrew Jackson died of consumption and dropsy; buried on his estate, the Hermitage, near Nashville, Tenn.

8. Martin Van Buren died of catarrh of the throat and lungs; buried at Kinderhook, N. Y.

9. William Henry Harrison died of pleurisy, induced by a cold taken on the day of his inauguration; buried near North Bend, Ohio.

10. John Tyler died of a mysterious disorder like a bilious attack; buried at Richmond, Va.

11. James K. Polk died from weakness, caused by cholera; buried on his estate at Nashville, Tenn.

12. Zachary Taylor died from cholera morbus, induced by improper diet; buried on his estate near Louisville, Ky.

13. Millard Filmore died from paralysis; buried in Forest Hill Cemetery, Buffalo, N. Y.

14. Franklin Pierce died from inflammation of the stomach; buried at Concord, N. H.

15. James Buchanan died of rheumatism and gout; buried near Lancaster, Pa.

16. Abraham Lincoln, assassinated by J. Wilkes Booth; buried at Springfield, Ill.

17. Andrew Johnson died from paralysis; buried at Greenville, Tenn.

18. Ulysses S. Grant died from cancer of the throat; buried at Riverside Park, New York city.

19. Rutherford B. Hayes died from paralysis of the heart; buried at Fremont, O.

20. James A. Garfield died from the bullet of an assassin, Charles Guiteau; buried at Mentor, O.

21. Chester A. Arthur died from Bright's disease; buried at Rural Cemetery, Albany, N. Y.

The Silver Question

IN all civilized countries either gold or silver has been adopted as the standard of monetary value.

The following is a list of the most important countries in the world, divided into three groups, those using (1) a gold standard, (2) a silver standard, (3) a double or variable standard. Of these last it may be said that the term "variable" is preferable to that of "double," inasmuch as the double standard never exists at one and the same time, gold or silver becoming alternately the standard, as the

state of the exchanges makes the one or the other the more desirable as the practical medium of exchange. Its weight is a chief objection to the use of silver in business transactions. Silver has long been a matter of discussion, both in Congress and out, and party lines are to some extent drawn, according to views on this subject.

Gold Standard.

Australia.	Great Britain and Ireland.
Brazil.	Liberia.
British Colonies in Africa.	New Zealand.
British N. America.	Norway.
Denmark.	Portugal.
Egypt.	Sweden.
German Empire.	Turkey.

Silver Standard.

Australia.	Hungary.
Bolivia.	India.
China.	Japan.
Cochin China.	Mexico.
Colombia.	Peru.
Ecuador.	Russia.
E. Indian Isles.	Tripoli.

Double or Variable Standard.

Argentine Republic.	Italy.
Belgium.	Netherlands.
Chili.	Roumania.
Cuba.	Spain.
France.	Switzerland.
Greece.	Venezuela.
Hayti.	United States.

States and Territories—Their Fictitious Names

ALABAMA (Ala.).—The name is of Indian origin, signifying "Here we rest."

ARIZONA TER. (Ariz.)—An Indian word, meaning "sand hills."

ARKANSAS (Ark.).—French and Indian words, signifying "Bow of Smoky Waters." The fictitious name of the State is "Bear State," from the number of these animals formerly found there.

CALIFORNIA (Cal.).—From Spanish words, meaning "hot furnace." The fictitious name is "The Golden State."

COLORADO (Colo.).—Spanish word, meaning "colored."

CONNECTICUT (Conn.).—An Indian name, signifying "The Long River." The nicknames are "Freestone State," "Nutmeg State," and "Land of Steady Habits."

DAKOTA (Dak.).—Indian word, meaning "allied."

DELAWARE (Del.).—Named in honor of Lord De La War. It is called "The Diamond State," from its small size and its intrinsic worth; also "Blue Hen State."

FLORIDA (Fla.).—From the Spanish, meaning "flowery;" so called from the abundance of flowers, and the day (Easter Sunday) upon which it was discovered. From its shape it is sometimes called "The Peninsular State."

GEORGIA (Ga.).—Named in honor of King George II. of England. The nickname is the "Empire State of the South."

ILLINOIS (Ill.).—An Indian word, signifying "Tribe of Men." The sobriquet is "Prairie State;" also, "Sucker State."

INDIANA (Ind.).—So called from the Indians. The original meaning of the word India is "river." The nickname is "The Hoosier State."

IOWA (Ia.).—An Indian word, meaning "The Sleepy Ones." The fictitious name is "The Hawk-eye State."

KANSAS (Kan.).—Indian word, signifying "Smoky Water." The sobriquet is "Garden of the West."

KENTUCKY (Ky.).—Indian name signifying "The Dark and Bloody Ground." The nickname is "The Corn-Cracker State."

LOUISIANA (La.).—Named in honor of King Louis XIV. of France. The sobriquet is "The Creole State."

MAINE (Me.).—So called from Maine in France. The fictitious name is "The Pine Tree State."

MARYLAND (Md.).—Named in honor of Queen Henrietta Maria, of England.

MASSACHUSETTS (Mass.).—An Indian name, signifying "Blue Hills." The fanciful name is "The Bay State."

MICHIGAN (Mich.).—Indian word, meaning "The Lake Country." It is nicknamed "The Lake State;" also, "The Wolverine State."

MINNESOTA (Minn.).—From Indian words meaning "Cloudy Water." It is called "The Gopher State."

MISSISSIPPI (Miss.).—Indian word for "Father of Waters." It is nicknamed "The Bayou State."

MISSOURI (Mo.).—Indian word, meaning "Muddy Water." The Missourians are called "Pukes."

NEBRASKA (Neb.).—An Indian word, meaning "Shallow River."

NEVADA (Nev.).—A Spanish word, signifying "Snow-clad." The fictitious name is "The Sage Hen State."

NEW HAMPSHIRE (N. H.).—Named from Hampshire county, Eng. The sobriquet is "The Granite State."

NEW JERSEY (N. J.).—Named for the Isle of Jersey. The sobriquet is "The Jersey Blue."

NEW MEXICO TER. (N. M.).—Spanish. Named from the country of Mexico, meaning "The Place of Aztec, God of War."

NEW YORK (N. Y.).—Named in honor of the Duke of York and Albany. It is called "The Excelsior State" and "The Empire State."

NORTH CAROLINA (N. C.).—Named, with South Carolina, in honor of Charles II. of England. The fictitious names are "The Old North State," "The Tar State" and "The Turpentine State."

OHIO.—An Indian word, signifying "Beautiful." It is nicknamed "The Buckeye State."

OREGON (Ore.).—Signifies "River of the West."

PENNSYLVANIA (Pa.).—"Penn's woodland" is the signification. The sobriquet is "The Keystone State."

RHODE ISLAND (R. I.).—Named from the Isle of Rhodes, in the Mediterranean. Rhodes signifies a "rose." It is nicknamed "Little Rhody."

SOUTH CAROLINA (S. C.).—Named in the same manner as North Carolina, which see. The sobriquet is "The Palmetto State."

TENNESSEE (Tenn.).—Derived from Indian words signifying "River of the Big Bend." It is nicknamed "The Big Bend State."

TEXAS (Tex.).—Spanish; it is said to signify "Friends." It is nicknamed "The Lone Star State."

UTAH (Utah).—Named from the Utes, or Utah Indians.

VERMONT (Vt.).—From the French, signifying "Green Mountain." It is called "The Green Mountain State."

VIRGINIA (Va.).—Named for Elizabeth, Queen of England—the "Virgin Queen." It is nicknamed "The Mother of States," also "The Old Dominion."

WASHINGTON (W.).—Named for President Washington.

WEST VIRGINIA (W. Va.).—It is nicknamed the "Panhandle State."

WISCONSIN (Wis.).—Named from its principal river, and that from the French, meaning "flowing westward." The fictitious name is "The Badger State."

WYOMING (Wyo.).—An Indian term, meaning "large plains."

Stock Brokers' Technicalities

A BULL is one who operates to depress the value of stocks, that he may buy for a rise.

A BEAR is one who sells stocks for future delivery, which he does not own at the time of sale.

A CORNER is when the Bears cannot buy or borrow the stock to deliver in fulfillment of their contracts.

OVERLOADED is when the Bulls cannot take and pay for the stock they have purchased.

SHORT is when a person or party sells stocks when they have none, and expect to buy or borrow in time to deliver.

LONG is when a person or party has a plentiful supply of stocks.

A POOL OR RING is a combination formed to control prices.

A broker is said to CARRY stocks for his customer when he has bought and is holding it for his account.

A WASH is a pretended sale by special agreement between buyer and seller, for the purpose of getting a quotation reported.

A PUT AND CALL is when a person gives so much per cent. for the option of buying or selling so much stock on a certain day, at a price fixed the day the option is given.

Uncle Sam

THIS is the popular title for the provisions for the United States. In the year 1812, a large quantity of provisions for the army was purchased at Troy, N. Y., by Elbert Anderson, a government contractor. The goods were inspected by two brothers, Ebenezer and Samuel Wilson. The last-named was invariably known among the workmen as "Uncle Sam." The packages were marked E. A.—U. S. On being asked the meaning of these initials, a workman jokingly replied that he did not know unless they meant Elbert Anderson and Uncle Sam. So the title became current among workmen, soldiers and people, and the United States Government is known as Uncle Sam.

BUSINESS TERMS AND RULES

Abandonment.—Relinquishing to underwriters property saved from shipwrecks.

Abatement.—Discount; sum allowed on payment of money before due.

Acceptance.—A receiving so as to bind the agreement to pay a bill or draft.

Accommodation Paper.—The loan of commercial paper or credit.

Accrued.—Interest or increase due and unpaid.

Account.—A statement; an arrangement of debits and credits in relation to any person or thing; a record of business transactions.

Account Sales.—A statement of the product arising from the sale of goods received by a merchant from another party, and sold for his benefit, together with the costs and charges incurred in making such sale.

Accountant.—One who is skilled in accounts.

Actuary.—A clerk of certain courts and insurance offices; one skilled in annuities; an acting officer.

Administrator.—One who manages an intestate estate.

Adjustment.—Settlement of a difference between two parties.

Ad valorem.—According to value.

Advance.—Additional price, stock above par.

Advances.—Sums of money paid by a merchant upon goods lodged in his hands for sale at future time. This term also covers money loaned by bankers on bills of lading.

Affidavit.—A declaration under oath made in writing.

Agent.—A person who acts for another; a deputy.

Adulteration.—Mixing a spurious with a genuine article.

Allowance.—Abatement, a deduction made for various reasons.

Ambassador.—An envoy of the highest rank sent to a foreign government.

Appraise.—To estimate the value of goods or property.

Appurtenance.—That which appertains or belongs to something else.

Arbitration.—The referring of a controversy to persons chosen by the parties to decide it.

Arrear.—That which is behind in payment.

Assay.—To determine the amount of a particular metal in an ore or metalic compound.

Assess.—To tax, or value for the purpose of taxing.

Assets.—Resources, property in possession or money due.

Assignee.—One to whom something is assigned, one who receives property to dispose of for the benefit of creditors.

Assignor.—One who makes a transfer to another.

Assignment.—The transfer of property to assignees.

Assume.—To take on one's self or become liable for the debts of another.

Attachment.—A writ or warrant for the purpose.

Attest.—To call to witness or give official testimony required in solemn instruments.

Attorney (Power of).—A document by which a person authorizes another to act in his stead.

Auditor.—A person authorized to examine and adjust accounts.

Award.—The decision of arbitrators in a disputed transaction.

Bail.—Surety for another; giving security for appearance on trial.

Bailee.—One to whom goods are delivered in trust

Bankrupt.—A person who, by reason of inability to meet his obligations, surrenders his property to his creditors and seeks the relief allowed him by law. At present there is no general law upon this subject, the laws of the several States regulating it.

Bill of Exchange.—An order drawn by a creditor upon his debtor demanding of him payment of a specified sum of money at a designated time. The acceptance of such a bill renders it a binding obligation upon the person upon whom it is drawn.

Bill of Lading.—A printed receipt given by the master of a vessel, or the agent of a transportation company, for freight shipped by such vessel or company. Upon the presentation of a bill of lading at the point of destination, the carrier must deliver the freight to the person presenting the bill.

Bills Discounted.—Promissory notes, acceptances, or bills of exchange discounted for the accommodation of an indorser by bankers.

Bills Payable.—Promissory notes or drafts held by a merchant against others for future payment.

Bills Receivable.—Promissory notes or drafts due to a merchant by others.

Bill of Rights.—A bill permitting an importer to examine his goods at the custom-house.

Bullion.—Uncoined gold or silver, including gold dust, ingots or bars.

Call Loan.—Money loaned by a banker or other person, secured by the deposit of stocks, bonds, or other marketable securities, to be repaid when called for.

Capital.—Money or property invested in business.

Carat.—Weight showing the degree of fineness of gold.

Carte blanche.—Signature of an individual or individuals on blank paper with space above to write a note; full power.

Chancellor.—A judge of a court of chancery or equity.

Charter.—A formal writing conferring title, right or privileges.

Charter-party.—A contract by which the whole or part of a vessel is let to a merchant or other person for the conveyance of goods on a particular voyage.

Check.—An order upon a bank, or banker, to pay on demand to the person named in the check, or to his order, the sum of money specified in the body of the check in writing.

Choses in action.—Things of which the owner has not the possession, but merely the right of action for the possession, as notes, accounts, etc.

Choses in possession.—Things of which one has possession.

Clearance.—Certificate from the custom authorities permitting a vessel to leave port.

Clearing.—Act of leaving.

Clearing-house.—Place where banks exchange checks or drafts and settle their differences.

Closed Policy.—A policy in which the amount insured is definitely stated.

C. O. D.—Collect on Delivery. Goods sent by express marked in this way must be accompanied by the bill for them. This bill is collected and receipted by the messenger of the express company before delivering the goods.

Codicil.—A supplement to a will.

Collaterals.—A term used to designate stocks, bonds, or other securities deposited to secure the payment of loans.

Commission.—The percentage for buying or selling goods or stocks.

Common law.—In Great Britain and the United States the unwritten law that receives its binding force from immemorial usage; in distinction from written or statute law.

Compact.—An agreement by which the parties are firmly bound together.

Compound.—To settle on terms different from the original agreement.

Compromise.—An amicable adjustment by mutual concession.

Common Carrier.—One who makes it a business to transport goods; railroad companies are common carriers.

Consignee.—The person to whom goods are sent or consigned.

Consignment.—Goods consigned or trusted to an agent to be sold.

Consignor.—One who commits or consigns goods to another.

Consols.—The three per cent. funded debts of England.

Contraband.—Prohibited; illegal.

Contract.—An agreement based upon sufficient consideration to do or not to do some particular thing.

Condition precedent.—A condition which must be carried out before the obligation is performed.

Countersign.—To sign, as secretary or subordinate officer, a writing which has been signed by the superior.

Coupon.—An interest certificate attached to a bond; when paid, it is cut off.

Coverture.—The state of a married woman.

Currency.—Money in current use.

Customs.—Duties on goods imported or exported.

Custom House.—The place where duties are paid, and vessels enter and clear.

Days of grace.—Usually three days allowed for the payment of a note after maturity.

Debenture.—A certificate for bounty or rebate to be paid to the exporter of goods.

Deed.—A sealed instrument used in the conveyance of real estate.

Defalcation.—A deduction; abatement or diminution, as in a promissory note.

Defaulter.—One who fails to pay or account for money intrusted to him.

Demand.—An asking by authority; a claim by right.

Demise.—To convey; to bequeath by will.

Demurrage.—Allowance for detention of a ship beyond a specified time.

Demurrer.—An assent to facts for an issue on law.

Demurer.—An exception to evidence produced; to rest or stay.

Deputy.—One appointed to act for another; a representative.

Discount.—In mercantile transactions, a discount means a deduction of a certain amount from the face of a bill for cash. In banking, a discount means the deduction of a certain amount from the face value of a note or bill, as a payment for allowing the holder of the note the immediate use of the money; the rate of discount varies.

Dividend.—A portion allotted to stockholders in dividing the profits.

Donee.—One to whom a gift is made or a bequest is given.

Donor.—One who gives or bestows.

Draft.—A bill of exchange used for domestic purposes.

Drawback.—Duty refunded on exported goods.

Drawee.—One on whom a draft is drawn; the payor.

Drawer.—One who draws a bill or draft.

Duplicate.—A copy or transcript of anything.

Duress.—Personal restraint, or fear of personal injury or imprisonment. It nullifies all contracts into which it enters.

Earnest.—A pledge, like money deposited, affords good grounds for reliance.

Effects.—Goods or property of any kind.

Embargo.—Prohibition of vessels from sailing.

Embarassment.—Financial distress; on the verge of bankruptcy.

Embassy.—A public message or commission; the person by whom it is sent.

Embezzlement.—Unlawful appropriation of what is intrusted to one's care.

Endorse.—To write one's name on the back of a check, note, or draft.

Engross.—To copy a manuscript.

Equity.—In law, qualifying or correcting the law in extreme cases.

Estate.—The degree, quantity, nature and extent of interest which a person has in real property.

Estoppel.—In law, some previous act which estops or precludes a man from making a given plea or pretence.

Exchange.—Act of bartering; a bill drawn for money; a place where merchants meet; a difference between the value of money in two places, or the premium and discount arising from the purchase and sale of funds.

Executor.—One who settles the estate of a testator.

Executory.—Yet to be performed.

Exports.—Goods or produce carried abroad in commerce.

Face.—The amount expressed on a note or draft.

Factor.—An agent to whom goods are consigned—differs from broker in that the factor has the custody of the goods.

Failure.—Act of becoming insolvent.

Fac Simile.—An exact copy.

Fancy Stocks.—Term applied to stocks subject to sudden fluctuation in price.

Favor.—A note or draft is said to be in favor of the payee.

Fee Simple.—An estate held by a person in his own right and descendible to his heirs.

Financier.—An officer of finance; one having charge of the revenue.

Fiscal.—Pertaining to a treasury or revenue.

Foreclose.—To cut off the power of redemption under a mortgage.

Forestall.—To buy goods before they reach the market.

Folio.—Page of a book, usually the two opposite pages.

Franc.—A French silver coin, value about 20 cents.

Frank.—A free letter; a writing which exempts from postage.

Fraud.—Artifice by which another's right or interest is impaired.

Free Trade.—The policy of conducting international commerce without duties.

Freehold.—Land held by free tenure or in fee simple, subject to no superior or conditions.

Funds.—Stock or capital, a sum of money.

Gauging.—Measuring the contents of casks, etc.

Grant.—Conveyance; bestowment; a thing conveyed by deed.

Gross Weight.—Weight of goods, including case, bag, etc.

Guarantee or Guaranty.—A surety for performance by a third person; one who warrants.

Guarantor.—A warrantor.

Habeas Corpus.—A writ to deliver a person from false imprisonment.

High Seas.—Waters of the ocean outside of the jurisdiction of any country.

Honor.—To accept and pay when due.

Hypothecate.—To pledge as security.

Import.—To bring from another country.

Importer.—One who brings goods from abroad.

Impost.—Duty on goods paid by the importer.

Indemnity.—Recompense for injury or loss.

Indenture.—A writing containing a contract.

Indorsement.—A writing on the back of a note.

In re.—In the matter of.

Insolvency.—Inability to pay all debts.

Insurance.—Indemnity from loss; the rate paid for indemnity.

Instalment.—Part of a sum of money paid or to be paid from time to time.

Interest.—The use of money; premium paid for the use of money.

Intestate.—Dying without making a valid will.

Investment.—The laying out of money in the purchase of property.

Inventory.—A list of goods.

Invoice.—A list of goods bought or sold, or consigned.

Jettison.—A voluntary throwing of goods overboard at sea in a storm to lighten ship.

Jointure.—An estate in lands settled on a woman in consideration of marriage.

Joint Stock.—Property held in common by a company.

Joint-tenancy.—Joint occupancy; not so close intimacy as partnership.

Journal.—A book used to classify and arrange business transactions.

Judgment Note.—A note in the usual form, with the addition of the power to confess judgment if not paid.

Jurisdiction.—The authority by which judicial officers take cognizance of and decide causes.

Larceny.—The taking of goods or other personal property feloniously.

Law-merchant.—The general body of commercial usages in matters relative to commerce.

Lease.—A letting of land, etc., for hire; the writing or contract for such letting.

Legacy.—A bequest; a particular thing or certain sum of money given by last will or testament.

Ledger.—Book of accounts.

Lessee.—One to whom a lease is made.

Letters of Credit.—A letter authorizing the holder to receive money on account of the writer.

Liability.—Debt or claim against a person.

License.—Legal permission to sell goods or to do certain things.

Lien.—A legal claim on property to satisfy debt.

Liquidate.—To pay off, as debts; to settle or adjust accounts.

Loan.—To deliver to another, for temporary use; the thing lent.

Malfeasance.—An act which one has no right to do.

Mandatory.—One to whom business is intrusted or charge given.

Manifest.—A list of articles comprising a vessel's cargo.

Margin.—A sum of money deposited with a broker, in stock transactions, to protect him against loss by the depreciation of stocks held by him for another party. Also the difference between the value of securities deposited as collateral and the amount loaned upon them.

Marine.—Relating to the sea.

Maritime Law.—Law relating to harbors, ships and seamen.

Mark.—A weight in European countries for estimating gold and silver; a German gold coin equal to 23 $\frac{3}{10}$c.

Mart.—A place of public sale; a market.

Maturity.—The date when a note or draft falls due or is payable.

Maximum.—The highest figure.

Mercantile Law.—Law relating to business transactions.

Merger.—The absorption of a thing of lesser importance by a greater, whereby the lesser ceases to exist, but the greater is not increased. For instance, a note on which a judgment is recovered is absorbed by and merged in the judgment.

Minimum.—The lowest figure.

Mint.—The place where money is coined.

Misfeasance.—Doing in an improper manner, by which another receives an injury.

Mitigation.—Lessening the amount of a judgment, penalty or punishment.

Money.—Current coin and circulating medium.

Money Broker.—A broker who deals in money or exchanges.

Monopoly.—The sole power of vending goods.

Mortgage.—The conveyance of real estate as collateral security of a debt.

Mortgagee.—The person to whom the conveyance is made.

Mortgagor.—One who makes the mortgage.

Negotiable.—That may be transferred by endorsement and delivery, or by delivery alone.

Negotiate.—To transact business or treat with another respecting trade or treaty.

Net.—Clear of all charges and deductions.

Net Proceeds.—The sum left after deducting commission or discount, etc.

Non-feasance.—The non-performance of an act that should be done.

Non-suit.—Abandoning a case, usually by order of the court.

Note.—An obligation without a seal; a written promise to pay.

Notary Public.—An officer whose chief business it is to protest paper for non-payment.

Open Policy.—A policy upon which amounts yet to be ascertained and insured may be entered at different times.

Ostensible Partners.—Those whose names are made known to the public.

Outstanding Debts.—Those unpaid.

Overt.—Open to view, not secret, but manifest.

Par.—Equal value; when market value equals face value.

Partnership.—Company; union of two or more in business.

Pawnbroker.—One who lends money on pledge or deposit of goods.

Payee.—The party to whom payment is to be made.

Payor.—One who pays or is bound to pay.

Pledge.—A pawn ; a deposit as security.

Policy of Insurance.—Contract between the insurer and the insured.

Portage.—The price of carrying ; cost paid by the captain for running his vessel.

Premises.—Things previously mentioned ; houses, lands, etc.

Premium.—The sum paid for insurance ; the excess of value above par.

Price Current.—A table of the current price of merchandise, stocks, bills of exchange, etc.

Prima Facie.—On the first view of the matter.

Primage.—A charge imposed in addition to the freight.

Principal.—An employer ; the head of a commercial house ; the sum loaned upon which interest is paid.

Pro rata.—According to the rate ; proportionately.

Protest.—A formal declaration made by a notary public for want of payment of a promissory note, or for want of acceptance of payment of a bill of exchange.

Quarantine.—Restraint of intercourse to which a ship is subjected upon the supposition that she is infected with disease.

Quotations.—A statement of the prices of articles of merchandise, given for the information of correspondents.

Rate.—The proportion or standard.

Rebatement.—Deduction for prompt payment ; discount.

Real Estate.—Land, and everything that legally passes with the land, in a conveyance or sale.

Receipt.—A writing acknowledging the taking of money of goods.

Refund —To repay or pay back.

Resources,—Pecuniary means ; effects ; property.

Respondential Bond.—A pledge of a cargo at sea.

Retail.—To sell in small quantities.

Revenue.—Tax ; income ; rents ; customs and duties.

Reversionary Interest.—A right to possession of property at the termination of a certain period, or upon the death of the holder.

Revocation.—The recall of power or authority conferred, as the revocation of an agency.

Salvage.—A reward or recompense allowed by law for the saving of a ship or goods from loss at sea, either by shipwreck or other means.

Scrip.—Dividends issued by a stock company payable in stock. Scrip dividends are simply an increase of the capital of the company, as the stock issued to meet them is added to the capital, and in its turn is entitled to future dividends.

Seaworthy.—Fit for a voyage ; in a proper condition to venture at sea.

Secondarily.—Applied to the endorser of a note or the drawer of a bill, signifying that he is only *conditionally* liable, or liable if the maker and drawee fail.

Shipment.—Goods ; act of shipping.

Sight.—The time of presenting a bill to the drawee.

Signature.—The peculiar style in which a person signs his name.

Sinking Fund.—A fund created by a government or corporation for the extinction of its indebtedness, by the gradual purchase of its outstanding obligations, and the application of the interest saved on these obligations thus redeemed to further purchases.

Silent Partner.—One who invests his capital in a business house, but whose name does not appear in the firm. His liability is limited to the extent of his contribution, except in cases where he fails to make the proper publication of his connection with the concern.

Solicitor.—One who solicits ; a lawyer or advocate in a court of chancery.

Solvency.—Ability to pay all debts.

Specialty.—A writing sealed and delivered, containing some agreement.

Statement.—Usually a list of property, or resources and liabilities.

Statistics.—A collection of facts respecting any particular thing.

Statute law.—A law established by act of the legislative power.

Stipend.—Settled pay for services ; daily, monthly or annual salary.

Stipulation.—An agreement or contract.

Stocks.—Shares in joint stock companies, and notes on the Government,

Stock Broker or Jobber.—One who speculates in stocks.

Surety.—Security against loss ; a person bound for the faithful performance of a contract by another.

Tacit.—That which is understood ; implied.

Tare.—An allowance for weight of box, case, bag, cask, etc., containing merchandise.

Tariff.—A list of prices ; duties on imports and exports.

Tax.—A rate or sum of money imposed on persons or property for public use.

Tenants in common.—Persons holding lands and tenements by several and distinct titles, and not by a joint title.

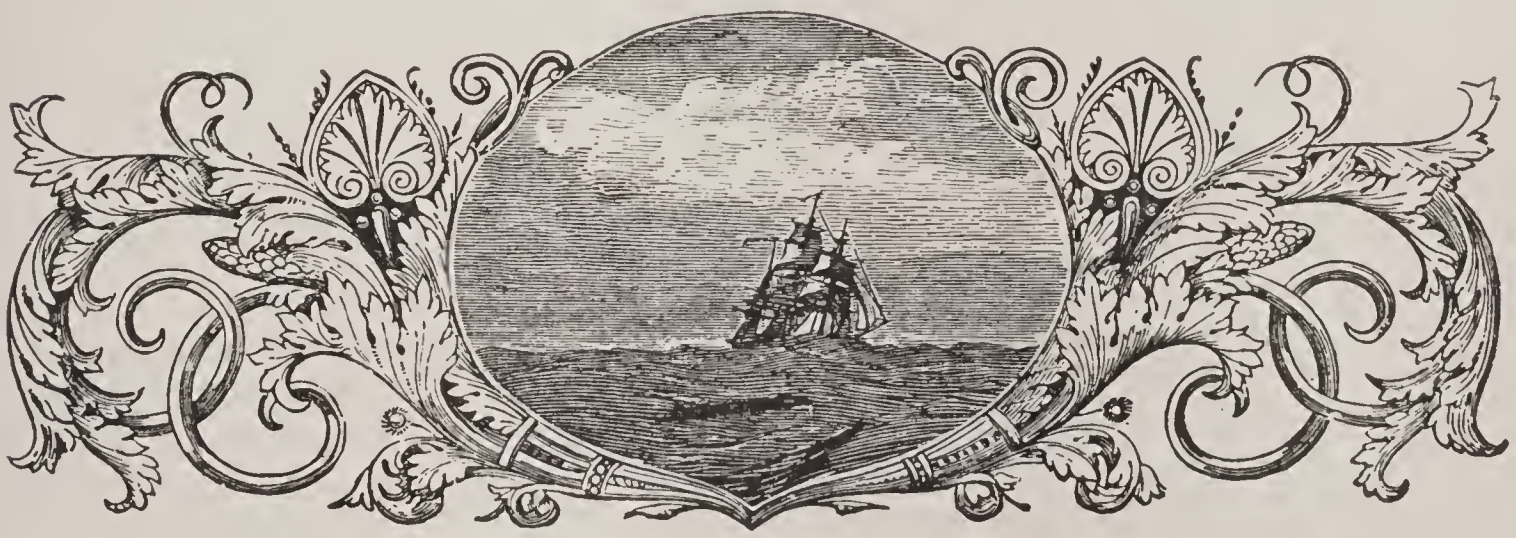
Tenant.—One who holds property under another.

Tenement.—That which is held.
Tender.—To offer for acceptance. Legal tender is such money as the law prescribes shall pass current.
Tenure.—The mode in which one holds an estate in lands.
Testator.—The person who has made a valid will.
Tickler.—Name of a book kept by banks.
Time of Draft.—A draft maturing at a future specified time.
Tonnage.—Weight of a ship's load; capacity of a vessel.
Transact.—To perform any act of business; to manage.
Transfer.—To convey; to sell or alienate title.
Treasury.—A place where public money is kept.
Trustee.—One to whom some special trust is assigned.

Uncurrent.—Not passing in common payment, as £. *s. d.* in the United States.
Underwriter.—An insurer; so called because he underwrites his name to the conditions of the policy.
Usage of Trade.—Custom, or the frequent repetition of the same act in business transactions.
Usance.—A fixed time on bills of exchange; business habit generally acted upon from force of custom.
Usury.—Excess of interest over the amount allowed by law.

Valid.—Of binding force; strong; effectual.
Value.—The rate of worth or amount or price of a commodity.
Vend.—To sell; to transfer for a pecuniary consideration.
Vendee.—The person to whom a thing is sold.
Versus.—Against.
Void.—Having no binding force or effect.
Voidable.—That which has some force or effect, but which, in consequence of some inherent quality, may be annulled or avoided.
Voucher.—A paper that confirms anything, particularly the truth of accounts.

Wages.—Compensation for services.
Waiver.—The relinquishment or refusal to accept of a right.
Wares.—Goods; merchandise; commodities.
Warrant.—To invest with authority to arrest a person; to insure against defects.
Wharfage.—Money paid for use of a wharf or dock.
Wharfinger.—The owner or keeper of a wharf.



BOOKKEEPING

THE following system of Bookkeeping, the best now in use in commercial schools and mercantile houses, should be learned by every boy and girl. It is so simple that it can be easily understood.

It would be well for the learner to have an instructor, but the system here presented can be learned without this by anyone who will study it page by page and diligently follow the instructions.

Signs and Abbreviations Used in Business.

Acct . . . . . Account
Ad lib. . . . . . At pleasure
Admr. . . . . . Administrator
Admx. . . . . . Administratrix
Adv. . . . . . Adventure
Agt. . . . . . Agent
Amt. . . . . . Amount
Ans. . . . . . Answer
A. D. . . . . . In the year of our Lord
A. M. . . . . . In the year of the World
A. M. . . . . . Before noon—Morning
Apr. . . . . . April
Asst. . . . . . Assistant
Asstd. . . . . . Assorted
Aug. . . . . . August
Ave. . . . . . Avenue
Bal. . . . . . Balance
Bds. . . . . . Boards
Bgs. . . . . . Bags
Bbl. . . . . . Barrel
Bk. . . . . . Bank
B. B. . . . . . Bill Book
Blk. . . . . . Black
Bls. . . . . . Bales
Bot. . . . . . Bought
Bro. . . . . . Brother
Brot. . . . . . Brought
Bu. . . . . . Bushel
Bxs. . . . . . Boxes
Bills Rec. or B|R . . . . Bills Receivable
Bills Pay. or B|P . . . . Bills Payable
Cap. . . . . . Capital
C. B. . . . . . Cash Book
Ch'gd. . . . . . Charged
Ck. . . . . . Check
C. L. . . . . . Car load
C. O. D. . . . . . Collect on delivery
Co. . . . . . Company
Coll. . . . . . Collateral
Col. . . . . . Collection
Const. . . . . . Consignment
Com. . . . . . Commission
Con. . . . . . Contra
Cr. . . . . . Creditor
Cts. . . . . . Cents
D. B. . . . . . Day Book
Dep. . . . . . Deposit
Dec. . . . . . December
Deft. . . . . . Defendant
Dft. . . . . . Draft
Dis. . . . . . Discount
D. I. . . . . . Double first class
Do. . . . . . Ditto—the same
Doz. . . . . . Dozen
Dr. . . . . . Debtor
Dray. . . . . . Drayage
D's. . . . . . Days
Ea. . . . . . Each
E. E. . . . . . Errors excepted
E. & O. E. . . . . . Errors and omissions excepted
Eng. . . . . . English
Ent'd. . . . . . Entered
Et al. . . . . . And others

Ex. . . . . . Example
Exch. . . . . . Exchange
Exp. . . . . . Expense
Ex. rel. . . . . . At the information of
Fav. . . . . . Favor
Feb. . . . . . February
f. o. b. . . . . . Free on board
Fol. . . . . . Folio
For'd. . . . . . Forward
Frt. . . . . . Freight
Gal. . . . . . Gallon
Gro. . . . . . Gross
Gt. Gro. . . . . . Great Gross
Guar. . . . . . Guaranteed
Hhd. . . . . . Hogshead
Hund. . . . . . Hundred
I. B. . . . . . Invoice Book
Ib. . . . . . Ibid—in the same place
Id. . . . . . Idem—the same
I. E. . . . . . Id est—That is
Ins. . . . . . Insurance
Inst. . . . . . Instant—the present month
Int. . . . . . Interest
Invt. . . . . . Inventory
Jan. . . . . . January
J. D. B. . . . . . Journal Day Book
J. F. . . . . . Journal Folio
Jour. . . . . . Journal
L. B. . . . . . Letter Book
L. C. L. . . . . . Less than Carloads
L. F. . . . . . Ledger Folio
Lbs. . . . . . Pounds
Mar. . . . . . March
Mdse. . . . . . Merchandise
Mem. . . . . . Memorandum
Messrs. . . . . . Gentlemen—Sirs
Mo. . . . . . Month
Nat. . . . . . National
N. B. . . . . . Nota Bene—Take notice
No. . . . . . Number (Numero)
N. O. S. . . . . . Not otherwise specified
Nov. . . . . . November
O. C. . . . . . Overcharge
Oct. . . . . . October
O. R. . . . . . Owner's Risk
Oz. . . . . . Ounce
P. . . . . . Page
Per. . . . . . By
Per cent. . . . . . By the hundred
Per an. . . . . . By the year
Payt. . . . . . Payment
P. C. B. . . . . . Pretty Cash Book
Pd. . . . . . Paid
Pkg. . . . . . Package
P. & L. . . . . . Profit and Loss

Pr. . . . . . Pair
P. S. . . . . . Postscript
Ps. . . . . . Pieces
Prem. . . . . . Premium
Pres. . . . . . President
Prox. . . . . . Proximo—the next month
Ptff. . . . . . Plaintiff
Recd. . . . . . Received
R. R. . . . . . Railroad
S. B. . . . . . Sales Book
Shipt. . . . . . Shipment
Sept. . . . . . September
St. . . . . . Street
St. Dft. . . . . . Sight draft
S. S. . . . . . Steamship
SS. or ss. . . . . . That is to say
Sq. ft. . . . . . Square feet
Sq. yds. . . . . . Square yards
Sund's. . . . . . Sundries
T. B. . . . . . Trial Balance
Trans. . . . . . Transaction
Ult. . . . . . Ultimo—the last month
Vis. . . . . . Namely
Vs. . . . . . Versus—against
W. B. . . . . . Way bill
Wk. . . . . . Week
Wt. . . . . . Weight
Yds. . . . . . Yards
Yr. . . . . . Year
$ . . . . . Dollars
¢ . . . . . Cents
£ . . . . . Pound Sterling
s. . . . . . Shillings
d. . . . . . Pence
/ . . . . . Used for shillings, as 3/6 = 3s. 6d.
@ . . . . . At or to
℅ . . . . . Account
B/L . . . . . Bill of lading
C/O . . . . . Care of
O. K. . . . . . All correct
" . . . . . Ditto
M. . . . . One thousand
% . . . . . Per cent
℔ . . . . . Per or by
&c. . . . . And so forth
& . . . . . And
√ . . . . . Check mark
№ . . . . . Number or pounds (*Number* when placed before a figure, *pounds* when placed after)
4.4 or 4/4. . . . . . Four quarter—one yard
1¼ . . . . . One and one-fourth
1½ . . . . . One and one-half
1¾ . . . . . One and three-fourths

METHOD OF KEEPING BOOKS.

Bookkeeping is the science of accounts. Bookkeeping, like Banking, was first used in Italy. Two distinct methods are in use: bookkeeping by single entry and bookkeeping by double entry.



HEAD FOR BOOKS.

Single Entry shows one's standing with the individual, firm or corporation with whom he has transacted business, and it does that as well as double entry; but it does not go beyond that.

Double Entry, and double entry alone, exhibits the relation of the business man to the kinds of property possessed, and the loss or gain made upon each kind, and without the aid of anything else than the taking of the account of stock; the Ledger, by double entry, exhibits all the facts of the case.

In double entry, accounts are not only with persons, but with all kinds of property, etc. The amounts which are placed on the debit side of one account must be placed on the credit side of another account. This is the fundamental principle of double entry bookkeeping, for there cannot be a debit without a corresponding credit, *and vice versa*.

Single entry is without the advantage of the check furnished by the Trial Balance used in Double entry. When one desires his Ledger closed, to see where he stands and how he has reached his present position, if his Ledger has been keep by single entry it will furnish only two schedules or lists, the one consisting of the names of individuals, firms, or corporations owing him, and the other consisting of the names of individuals, firms or corporations to whom he is in debt. All other facts needed in the determination of his condition must be ascertained outside of the Ledger.

Debits are entries upon the left hand or charge side of an account of business transactions. Credits are entries upon the right hand or discharge or trust side of an account of business transactions.

A Business Transaction is an exchange of values.

ACCOUNTS.

Accounts are of two kinds: *Speculative* and *Non-speculative*.

Speculative Accounts show losses and gains, and include such accounts as Merchandise, Real Estate, Railroad Stock, Expense, etc.

Non-speculative Accounts show *Resources* and *Liabilities* on which, from their nature, can be neither increase or decrease of value, such as Cash, Bills Receivable, etc., and on which there is neither loss nor gain, unless it arises incidentally, in the case of a failure of the individual, firm, or corporation in debt, or loss of cash by theft or fire.

BOOKS OF ACCOUNT.

Books of Account are the various books in which entries of business transactions are made, and are of three kinds: Books of

Original Entry, Auxiliary Books and Books of Subsequent Entry.

Books of Original Entry are those in which the business transaction is recorded at the time of its occurrence, and from which is taken, directly or indirectly, to the Ledger: as the Day Book, Cash Book, Invoice Book, Sales Book, etc.

Auxiliary Books aid materially in giving the particulars and details of a transaction. They comprise the Bank Book, Bill Book, Draft Book, Note Book, Order Book, Ticker, etc.

Books of Subsequent Entry are the Journal and Ledger. The Journal is sometimes used to prepare the entries for the Ledger, in which are collected together in one place, under their appropriate heads, all debits and credits of like character.

BILLS AND BOOKS OF ORIGINAL ENTRY.

The proper making of bills of goods is a very important feature of counting-house duty, and the recording of business transactions in books of original entry is of great importance.

The requisites of a proper book of original entries are:

First.—That the book is the original book of entries, and not one in which the entries are transcribed from another book.

Second.—That they shall be properly detailed and not lumped, giving such items of account, prices and kinds of goods that the party shall be able to tell what he is charged with.

Third.—That the entries charge the parties by name with sufficient definiteness to individualize the party charged, and to distinguish him from every one else.

Fourth.—That the entries are made for goods sold and delivered, or work and labor done in the usual course of business.

Fifth.—That the respective dates of the entries are given.

Sixth.—That the entries are made at or about the time the goods are set apart for delivery, or are delivered, or the work is finished.

DAY BOOK.

The book of original entry is the Day Book, or a subdivision of it. There should be entered into it, or its subdivision a concise and comprehensive history of the merchant's business transactions, and they should be so carefully and clearly made that one familiar



AN EXPERT ACCOUNTANT.

with business affairs, although an entire stranger to these particular transactions, would understand them fully by merely reading the record of them.

If mistakes are made, either in words or figures, they should be cancelled by drawing lines of red ink through the mistake, and should not under any circumstances be erased. As books of original entry only are allowed in cases of litigation, it becomes more important that erasures should not be made in them.

The Day Book is rarely ever used in a business by itself. The keeping of a Cash Book is strongly urged, no matter how limited

the business in either number or volume of transactions, and, when kept, to use it only for the receipt or disbursement of cash.

THE CASH BOOK.

This may be defined as that part of the Day Book, or that branch of the Day Book, into which is entered all cash received.

If the books of original entry are limited to the Cash Book and Day Book, the rule of classification to be followed in making entries



HEAD FOR MECHANICS.

in them is this: Enter into the Cash Book all Cash received and all Cash paid out, and enter everything else into the Day Book.

In very many businesses it is very desirable that there should be kept, in some way, an Invoice Book and a Sales Book.

THE INVOICE BOOK

Is that branch or department of the Day Book into which *purchases* of Merchandise are entered.

When it is necessary to keep an Invoice Book, it is also necessary to keep a

SALES BOOK.

This is a subdivision or part of the Day Book, into which are entered all *sales* of Merchandise made by the merchant. A Sales Book is sometimes made out of an ordinary letter copying book, into which, by an ordinary letter press, a copy of every bill sent by the merchant to his customers is taken, and from the Sales Book the charges and credits are taken to the Ledger.

When the books of original entry embrace Cash Book, Day Book, Invoice Book and Sales Book, there should be entered into the Cash Book, as above, all moneys received and all moneys paid out, and into the Invoice Book all Merchandise bought, and into the Sales Book all Merchandise sold, and into the Day Book every other kind of business transacted.

Sometimes the Bill Book is used as a book of original entry. When so used it ceases to be an Auxiliary Book and becomes a branch or division of the Day Book, into which are entered all Bills Receivable received and Bills Payable issued. Under such circumstances the Day Book would not be used for the reception and issuing of promissory notes and acceptances.

Transactions to be recorded in books of original entry when the Day Book and Cash Book only are kept.

February 3, 1888 —Commercial business with a Cash Capital of $2500. Bought of John B. Ellison & Sons 350 yds. Black Diagonal Cloth, @ $2.25=$787.50. Gave them my note, @ 90 days, for amount of their bill, $787.50. Sold T. J. Barlow 50 yds. Diagonal, @ $2.75 = $137.50. Received from him, cash, $137.50. Paid Rent of Store for one month, in advance, $125. Paid for Postage, $10.

The day-book items above would appear in the Day Book as follows:

PHILADELPHIA, FEBRUARY 3, 189 .

	Commenced business this day with a cash Capital of $2500				
	" "				
	Bought of John B. Ellison & Sons, on 90 days' note, 350 yds. Black Diagonal Cloth,	@	$2.25		787 50
	" "				
	Gave John B. Ellison & Sons my note at 90 days for invoice of this date.				787 50
	" "				
	Sold T. J. Barlow, for cash, 50 yds. Black Diagonal,	@	$2.75		137 50

The cash items in the above set of transactions would appear in the Cash Book as follows:

Dr. CASH. CASH. *Cr.*

189 Feb.	3		To Student	amount invested	2500 00			189 Feb.	3		By Expense	rent for 1 month	125 00	
"	"	5	" T. J. Barlow	bill of Date	137 50			"	"		" Expense	postage	10 00	
						2637	50	"	"		" Balance			135 00
														2502 50
						2637	50							2637 50
189 Feb.	3		To Balance			2502	50							

The books of every business man should faithfully reflect his monetary transactions. It is one of the achievements of a perfect system of book-keeping that it chronicles all the transactions of an individual or firm, and does it so effectively that the exact state of affairs can be made known any day. There must be clear ideas as to what needs to be done, and the strictest fidelity in doing it. Some mercantile accounts are continually and almost hopelessly muddled.

There is no necessity for this, and, besides, it is disastrous to all business success. The old-fashioned, country store-keeper used to carry his accounts in his head, or kept them with a piece of chalk on the cellar door. He was a man to be laughed at, not to be imitated.

Transactions to be entered in books of original entry, comprising Cash Book, Invoice Book, Sales Book and Day Book.

March 1, 189 .—Invested in business, Cash, $2000. Bought of Camden Woolen Mills, 650 yards of Cassimeres, @ $1.75 = $1137.50. Gave them cash, on account, $537.50, and my note, @ 60 days, for balance, $600. Paid one month's Rent, in advance, $100. Paid for Stationery, $12.50. Sold to John Stilz & Son 200 yds. Cassimeres, @ $2.25 = $450. Received in cash, on account, $200, and their note, @ 10 days, for $250. Bought of Wendell, Fay & Co. 500 yds. Black Serge, @ $2.25 = $1125. Gave them cash, on account, $625, and my note, @ 30 days, for $500. Sold to Hughes & Miller, 250 yds. Serge, @ $2.75 = $687.50. Received from them, cash, $687.50.

The cash items in preceding transactions would appear in Cash Book as follows:

Dr. CASH. CASH. *Cr.*

189								189									
Mar.	1	5	To Student	investment	2000	00		Mar.	1	8	By C. W. Mills	on account	537	50		
"	"	7	" J. Stilz & Son	on account	200	00		"	"	9	" Expense	rent	100	00		
"	"	7	" Hughes & Miller	bill of Date	687	50		"	"	9	" Expense	stationery	12	50		
							2887 50	"	"	10	" Wendell Fay & Co	on account	625	00		
															1275	00
								"	"		" Balance				1612	50
							2887 50								2887	50
189																
Mar.			To Balance				1612 50									

The purchases mentioned above would appear in the Invoice Book as follows:

PHILADELPHIA, MARCH 1, 189 .

	Camden Woolen Mills 650 yds. Cassimere,	@ $1.75		1137 50
	"	"		
	Wendell, Fay & Co. 500 yds. Black Serge,	@ $2.25		1125 00

The sales mentioned above would appear in the Sales Book as follows:

PHILADELPHIA, MARCH 1, 189 .

	Jno. Stilz & Son 200 yds. Cassimere,	@ $2.25		450 00
	"	"		
	Hughes & Miller 250 yds. Serge,	@ $2.75		687 50

Those items mentioned above, which do not appear in the Cash Book, Invoice Book and Sales Book, would be entered in the Day Book as follows:

PHILADELPHIA, MARCH 1, 189 .

	Gave Camden Woolen Mills my note, @ 60 days, to balance their bill this date		600 00
	"	"	
	Received from John Stilz & Son their note, @ 10 days, for balance of bill of this date		250 00
	"	"	
	Gave Wendell, Fay & Co. my note, @ 30 days, to balance their account		300 00

THE JOURNAL.

Is a book in which the debits and credits of transactions appearing in the books of original entry may be written before they are taken to the Ledger, and it is also used for the recording of debits and credits needed in closing the Ledger.

The writing of debits and credits in the Journal is called Journalizing.

DAY-BOOK JOURNAL.

The Day Book and the Journal are frequently combined in a book called the Day Book-Journal, in which the Day Book entry is written and journalized immediately underneath, and the amounts extended in the money columns as in the Journal, the money columns in the Day Book-Journal being used for debits and credits instead of for items and totals as in the Day Book.

RULES FOR DEBITING AND CREDITING.

The rules for debiting and crediting Personal Accounts, be they with individuals, firms or corporations, are:

Debit the account of those to whom you give any value. Credit the account of those from whom you receive any value.

The rules for debiting and acrediting accounts with things are:

Debit the thing received, or that which costs value. Credit the thing parted with or that which produces you value.

"Posting" is the process of transferring the various entries in the Cash Book and Day Book to their proper accounts in the Ledger. It is the custom of the best book-keepers to post their books once a week, and thus avoid an accumulation of work at the end of the month; but in no case should the posting be delayed longer than once a month, as it is necessary to close the Cash Book and Day Book on the last day of each month as has been already explained.

The book-keeper must be careful to post each entry on the proper side of the account in the Ledger, and to write the figures correctly, as the slightest error will throw the books out of balance.

Memorandum of transactions entered in the Day Book, on page 380, and here Journalized.

March 1, 189 .—Gave Camden Woolen Mills my note, @ 60 days, to balance account, $600. Received from John Stilz & Son their note, @ 90 days, for balance of bill this date, $250. Gave Wendell, Fay & Co. my note, @ 30 days, to balance their account, $500.

These would appear in the Journal as follows:

PHILADELPHIA, MARCH 1, 189 .

		Camden Woolen Mills		600 00	
			Bills Payable		600 00
		Bills Receivable		250 00	
			Jno. Stilz & Son		250 00
		Wendell, Fay & Co.		500 00	
			Bills Payable		500 00

Memorandum of transactions entered in the Cash Book, on page 380, and here Journalized.

March 1, 189 .—Invested in business $2000. Gave Camden Woolen Mills, on account, $537.50. Paid one month's Rent, $100. Paid for Stationery, $12.50. Received from Jno. Stilz & Son, on account, $200. Gave Wendell, Fay & Co., on account, $625. Received from Hughes & Miller, on account, $687.50.

These would appear in the Journal as follows:

PHILADELPHIA, MARCH 1, 189 .

		Cash		2887 50		
			Merchant		2000 00	
			Jno. Stilz & Son		200 00	
			Hughes & Miller		687 50	
		Camden Woolen Mills		537 50		
		Expense		100 00		
		Expense		12 50		
		Wendell, Fay & Co.		625 00		
			Cash		1275 00	

Memorandum of transactions entered in the Invoice Book, on page 380, and here Journalized.

March, 1 189 .—Bought of Camden Woolen Mills bill of Cassimeres amounting to $1137.50. Bought of Wendell, Fay & Co. bill of Serge, $1125.00.

These would appear in the Journal as follows:

PHILADELPHIA, MARCH 1, 189 .

		Mdse.		2262 50		
			Camden Woolen Mills		1137 50	
			Wendell, Fay & Co.		1125 00	

Memorandum of transactions entered in the Sales Book, on page 380, and here Journalized.

March 1, 189 .—Sold John Stilz & Son Cloths to the amount of $450. Sold Hughes & Miller bill of Cloths to the amount of $687.50.

These would appear in the Journal as follows:

PHILADELPHIA, MARCH 1, 189 .

		Jno. Stilz & Son		450 00		
		Hughes & Miller		687 50		
			Mdse.		1137 50	

LEDGER.

The Ledger is the principal book, and all other books are subservient to it. It is *the* book of accounts, and in it are gathered from the books of original entry, either directly or through the Journal, all the business transactions of which a record has been made; but nothing can be entered into the Ledger until (1) it is known to what account the entry belongs, and (2) on which side it is to be entered. For each person who becomes indebted to us, or to whom we owe anything, and for each sort of property of which we may become possessed, an account must be opened and indexed, and the date and amount of the item placed therein. Numerous transactions are thus brought, in this condensed form, into a very small compass. The debtor, or charged items, are placed on the left hand side and the creditor, or discharged, or trusted items, on the right hand side. By deducting the sum of the items on the one side, from the sum of the items upon the other side, an easy determination is made of the amount due to us, or due by us, or the amount of

property on hand, or the actual gain or loss.

The Ledger is a summary of the transactions, and gives only the date and amount of the items, the page of the books from which they have been brought, and the name of the corresponding accounts. For other particulars, reference must be made to the books of original entry and to the auxiliary books.

A double entry Ledger is usually divided vertically in the middle, and the ruling is the same on the left as on the right.

Transactions appear in the books of original entry in the order of the date of their occurrence, but in the Ledger they are classified in the order of their kind, all of the same kind being grouped together and constituting an account.

An account in the Ledger is an arrangement of the debits and credits of business transactions of a like character, in a space set apart for them with the name or title of the account written at the top.

The Ledger is made up exclusively of these different kinds of debits and credits, or different accounts, and every account has two sides—a debit or left hand one, and a credit or right hand one. Below will be found a space ruled as a page of a double entry Ledger, with the use of each division denoted:

(Side.) (Name of account.) (Side.)

Dr. BILLS RECEIVABLE. *Cr.*

(Year and month.)	(Day of month.)	(To account to be credited.)	(Folio of book from which posted.)	(Dollars.)	(Cents.)	(Year and month.)	(Day of month.)	(By account to be debited.)	(Folio of book from which posted.)	(Dollars.)	(Cents.)
189 July	14	To Jno. Wanamaker	560	758	69	189 July	9	By W. M. Singerly	549	565	73

CASH ACCOUNT.

Cash Account does not contain the items found in the Cash Book, but it is debited "To Sundries" for the total amount of cash received from all sources and credited "By Sundries" for cash expenditures of all kinds.

The Cash Account in the Ledger is in itself a skeleton Cash Book, or a Cash Book from which particulars have been excluded.

As more money cannot be paid out than is received, Cash Account will either close itself when all the money has been paid out, or will close "By Balance" for whatever amount remains unexpended. The difference between the two sides at any time should agree with the amount of Cash on hand at that time.

It is the custom of most book-keepers to use what is called a Petty Cash Book. Any blank book ruled with dollar and cent columns will answer. The Petty Cash Book is for expenditures only, and saves the book-keeper a great deal of time and labor which would be required were all the minor expenses entered in the Cash Book and transferred separately to the Ledger.

Cash is a *Non-speculative Account.* Take the following example:

Dr. CASH. *Cr.*

189						189				
Jan.	31	To Sundries	5	500 00		Jan.	31	By Sundries	5	300 00
Feb.	29	" do	20	300 00		Feb.	29	" do	20	400 00
Mar.	31	" do	34	200 00		Mar.	31	" do	34	150 00
Apr.	30	" do	46	100 00		Apr.	30	" do	46	200 00
May	31	" do	53	200 00		May	31	" do	53	100 00
June	30	" do	64	500 00		June	30	" do	64	300 00
						"	"	" Balance		350 00
				1800 00						1800 00
109										
June	30	To Balance		350 00						

It will be noticed that the total *Receipts* of Cash are entered on the Debit, or left hand side, and that the total *Payments* are entered upon the Credit, or right hand side.

MERCHANDISE ACCOUNT.

This is a *Speculative Account*, and is charged with all goods or other property which we buy for the purpose of selling in the regular line or conduct of our business. It embraces the manufacturers' wares, shopkeepers' goods and the produce or property in which a merchant trades, as well as the staple commodities of a country in the hands of regular dealers in them.

Merchandise is always Credited for the sale of that which has been charged against it. It may be likened to a clerk to whom is intrusted all the goods, etc., bought, and who is discharged from the responsibility of their care when they are sold.

This account must be credited "By Inventory" for the amount of merchandise on hand, as shown in the Inventory, then the account is to be closed "To" or "By Loss and Gain" account, according as the difference between the two sides shows a gain or a loss.

After closing and ruling this account, it must be debited "To Inventory" for the amount of the stock on hand.

The reader is recommended to rule several pages of a blank book, and to practice keeping a Day Book according to the instructions herein contained. By this it is not meant that he should simply copy or confine himself to the forms given in these pages. He should, beginning with the Cash and Day Books, open a complete set of books, and keep them as though he were actually engaged in business, extending them as far as possible, and posting them as directed in these instructions. This will give him an amount of practice which will be found very useful.

Purchases and Sales of Merchandise.

January 10, 189 .—Bought from John Wanamaker bill of goods amounting to $652.75. Bought from Strawbridge & Clothier a number of articles amounting to $126.37. Bought from Coffin, Altemus & Co. a case of Muslin for $141.63. Received from Wood, Brown & Co. Cassimeres to the amount of $1394.60. Bought from Morris & Lewis Beavers amounting to $3264.48. Bought of Hood, Bonbright & Co. Dry Goods to the amount of $463.74.

Sold M. L. Waterhouse & Sons, Frankford, Phila., Beavers to the amount of $326.48. Sold Curwen Stoddart & Bro. Beavers to the amount of $652.50. Sold S. C. Webster & Son Dry Goods to the amount of $231.87 Sold Mrs. M. D. Graham, Dover, Del., goods to the amount of $75.

Inventory of stock on hand amounts to $5500.

These entries taken from the Day Book, through the Journal, will appear in the Merchandise Account of the Ledger as follows:

Dr. MDSE. *Cr.*

189							189						
Jan.	10	To J. Wanamaker	8	652	75		Jan.	10	By M. L. Waterhouse	8	326	48
"	"	" Strawbridge & Clothier	8	126	37		"	"	" Curwen Stoddart & Co.	8	652	50
"	"	" Coffin, A. & Co.	8	141	63		"	"	" S. C. Webster & Son	8	231	87
"	"	" Wood, B. & Co.	8	1394	60		"	"	" Mrs. M. D. Graham	8	75	00
"	"	" Morris & Lewis	8	3264	78		"	"	" Inventory	12	5500	00
"	"	" Hood, Bonbright & Co.	8	463	74		"	"				
"	"	" Loss and Gain	15	741	98		"	"				
				6785	85						6785	85
189												
Jan.	31	To Inventory	14	5500	00							

PERSONAL ACCOUNTS.

A PERSONAL ACCOUNT is an account with either an Individual, a Firm, or a Corporation, or with such a natural or legal person as may sue or be sued at law.

An Account bearing the name of an Individual, Firm, or Corporation should be debited for all moneys paid, all goods sold, or for property of any sort or kind transferred to such individual, firm, or corporation.

Such an Account should be credited for all moneys received, or goods bought, or for property of any sort or kind received from such individual, firm, or corporation.

If the sum of the debits of such an Account is greater than the sum of the credits, the individual, firm, or corporation is in debt, and constitutes what is called in business a Book Account due to the merchant or business man, or an Asset, or a Resource, and will close "By Balance." If, on the other hand, the sum of the credits is greater than the sum of the debits, the merchant or business man owes the individual, firm, or corporation, and it is called a Liability, and will be closed "To Balance."

A very great assistance to the book-keeper in checking his books is the habit, now well-nigh universal, of sending out statements of accounts on the first of each month, by which we learn whether or not the books of our customers agree with our books, and, receiving from those to whom we are indebted, similar statements, we learn how our accounts appear on the Ledgers of those to whom we are indebted, and thus is instituted a comparison between our accounts as they appear on their books and their accounts as they appear on our books.

This matter of sending out monthly statements should be borne in mind, because it is of assistance to the book-keeper in testing the correctness of his books, as well as for its importance to the financial management of the business. One can never be too prompt in making monthly statements.

Personal Accounts are *Non-speculative Accounts.*

Business Transacted with Individuals, Firms and Corporations.

February 10, 189 .—Sold Robert Boyd, bill of Oils and Paints to amount of $135.50. Also sold him 100 shares Reading R. R. Stock, @ $30 a share, $3000. Bought of him 100 shares Penna. R. R. Stock, @ $52 a share, $5200. Received from him Cash for amount of bill of goods sold him, $135.50. Paid him, on account of balance due on exchange of Railroad Stocks, $1000.

This will appear in Robert Boyd's Account of the Ledger as follows :

Dr. ROBERT BOYD. *Cr.*

189–.						189–.					
Feb.	10	To Mdse.	10	135	50	Feb.	10	By Penna. R. R. Stock	10	5200	00
"	"	" Reading R. R. Stock	10	3000	00	"	"	" Cash	10	135	50
"	"	" Cash	10	1000	00						
"	"	" Balance		1200	00						
				5335	50					5335	50
						189–.					
						Feb.	10	By Balance		1200	90

It will be noticed that Personal Accounts, be they with individuals, firms or corporations, are debited for all values given to them, and credited for all values received from them. The observance of this principle will be of benefit in all bookkeeping.

BILLS RECEIVABLE ACCOUNT.

A Bill Receivable is a written obligation for the unconditional payment of a certain sum of money at a specified time to a certain person, his order or bearer, without interest, issued by any one but the merchant, and payable to him by virtue of the written promise contained in it. It may be either a negotiable promissory note, or an acceptance of a time draft.

Bills Receivable Account in the Ledger is debited whenever such a note or draft is received, and is credited whenever such a note or draft is transferred to another, either in the course of trade, or when surrendered to the maker upon payment.

The language of a negotiable promissory note varies in different States of the Union. The following are the more common forms :

1750\frac{53}{100}$. *Philad'a, March 15, 189–.*

Thirty days after date, I promise to pay.....
to the order of Sharpless Brothers.....
Seventeen hundred and fifty.....$\frac{53}{100}$ Dollars,
at the Girard National Bank, without defalcation, value received.
No. 12. Due 4|14|17|9–. *Edward Hayworth.*

387\frac{50}{100}$ *Baltimore, Md., June 14, 189–.*

Thirty days after date, I promise to pay.....
to the order of Jno. W. Garrett's Sons.....
Three hundred and eighty-seven..... .....$\frac{50}{100}$ Dollars,
value received.
No. 3. Due 7|14|17|9–. *A. B. Long.*

Drafts are sometimes drawn after date and sometimes after sight. Those drawn after date, *if accepted*, are payable the prescribed time, plus three days of grace, after the date of the instrument. Those drawn after sight are payable the prescribed time, plus grace, after acceptance, in neither case are they binding upon the person upon whom they are drawn unless he agrees to honor them by his written acceptance across the face. An acceptance of a draft is as binding upon the person who signs it as is his signature to a note.

It will be noticed that Bills Receivable Account is always debited when notes and accepted drafts payable to the merchant or business man are received and credited whenever such notes and accepted drafts are transferred to others.

BILLS PAYABLE ACCOUNT.

A Bill Payable is a written obligation for the unconditional payment of a certain sum of money at a specified time to a certain person, his order or bearer, without interest, issued by one and payable by him by virtue of his written promise contained in it. It has to some extent the force of a note, given over the signature of the one who is obligated to the amount named in the note.

Bills Payable Account is credited when one issues, either in the form of a promissory note, or of an acceptance of a time draft drawn upon him, such a written obligation, and it is debited when one redeems such obligations.

The language of a Bills Payable is the same as that of a Bills Receivable. It is called a Bills Payable when one is unconditionally liable as maker or acceptor of the obligation, and it is called a Bills Receivable when it is held by some other person than the maker or acceptor. The same note or acceptance has both names applied to it; that is, it is both a Bills Receivable and a Bills Payable. It is a Bills Payable only to one person. All other persons who may become holders of it, call it a Bills Receivable. The name is not applied because the note or acceptance is received by the merchant, or parted with by him, but the name arises from the relation which the holder bears to the note or acceptance. If, as above stated, the relation be that of payor of the note or acceptance when due, the payor will call it a Bills Payable, and all other persons who may have handled the note or acceptance call it a Bills Receivable.

STORE FIXTURES ACCOUNT.

A storekeeper needs shelving, counters, desks, a fireproof safe, etc., and when he purchases such property for his own use, he does not charge it to Merchandise, because he does not buy the shelving, etc., for the purpose of selling it, nor would it be just to his business to pay for such property and call it an expense of business; for, if he should sell out, these fixtures would constitute a valuable piece of property, which he could sell to his successor, or, if he were to go out of business, they could be sold to a dealer in fixtures. The rule requiring a separate account to be kept of fixtures, in distinction from merchandise is very serviceable and should be observed.

Again, if the business man was not a storekeeper, but a manufacturer, he would need to buy machinery, tools, etc., and in some departments of business this account would be called "Machinery and Tools."

Store Fixtures, or Machinery and Tools, or Furniture, would be debited for the full value of all such property purchased, and would be credited in case any of it should ever be sold.

These are *Speculative Accounts* and must be credited with the amount of Inventory of Stock on hand in each, and the accounts then closed into Loss and Gain.

After closing and ruling these accounts, they must be debited "To Inventory" for the amount of the stock on hand.

Store Fixtures Purchased and Sold.

March 9, 189 .—Bought of Amos Hillborn & Co. Office Desks and Chairs, costing $150. Bought from Marvin Safe Co. one large double Fireproof Safe, $225. Bought of Cornelius & Co. Gas Fixtures for office, $60. Wm. C. Merritt has put up Shelving and Counters and sent me his bill, amounting to $85.

July 5, 189 .—Sold for Cash, to a dealer, my Office Desks for $60. Bought of Hall & Garrison new double Desk, $50.

This will appear in a Store Fixtures Account of the Ledger as follows:

Dr. STORE FIXTURES. *Cr.*

189						189					
Mar.	9	To A. Hillborn & Co.	19	150	00	July	5	By Cash	19	60	00
"	"	" Marvin Safe Co.	19	225	00						
"	"	" Cornelius & Co.	19	60	00						
"	"	" W. C. Merritt	19	85	00						
July	5	" Hall & Garrison	19	50	00						

EXPENSE ACCOUNT.

This is an account which enables a business man to gather together all the running expenses of his business in one place for any given period. It informs him of the outgo, while other accounts show him what the income and profit are.

It is debited for all moneys paid, or liabilities incurred, from which no direct return is expected, as, for instance, rent of store, hire of clerks, advertising, etc. Under this general head or account is charged up on the debit side everything that is expended in the conduct of the business, except that spent for the commodities in which one deals, and such matters as have been previously described as Store Fixtures, or Machinery and Tools, etc., or Furniture. It is frequently subdivided. If one desires to know just how much is spent for rent, he opens a Rent Account and charges that account with the money either paid for rent, or owed for rent, and does not put it in Expense Account. If, for any reason, the merchant desires to know how much he is spending for clerk hire, he opens an account called Salary Account or Clerk Hire Account. If one desires to know how much he is spending for Postage, he may open a Postage Account, and not charge postage until the end of the year, when he would debit Expense for the whole sum. In general, it may be said that where the amounts spent for a particular kind of expense are large, it is good usage to open a specific account for that kind of expense, leaving the Expense Account to be charged only with those things which cannot be very well individualized, and which would not amount to any considerable sum in a year.

Expense is a *Speculative Account*, and closes into Loss and Gain.

REAL ESTATE ACCOUNT.

This is the name of a Ledger Account to which is charged the cost of all Real Estate, consisting either of land or buildings, or both. It is frequently the case that a bookkeeper has as many Real Estate Accounts as there are independent properties possessed, and they are distinguished one from another by words in the title of the account denoting the locality, or previous owners of the property.

Real Estate Account is debited with its cost, with repairs and all taxes.

It is credited for the sales and for all rents received.

DISCOUNT AND INTEREST ACCOUNT.

This account is debited for all moneys which one pays for money borrowed, and for all discounts allowed debtors on their bills for payment of the same before maturity. It is credited for all moneys received for the loan of money, or for discounts allowed by creditors for the payment of bills before maturity. The importance of this account will be seen when we consider that a large part of business is carried on by loans and discounts.

It is a *Speculative Account*, and closes into Loss and Gain.

Discounts received and allowed, and transactions with others involving interest.

June 1, 189 .—Received from J. B. Lippincott Co. an allowance of 5 per cent. for cash payment of bill of May 28, $13.93. Allowed Granville B. Haines & Co., 3 per cent. discount for cash settlement of bill of May 21, $48.37. Paid Guarantee Trust Co. 4 months' interest on my loan from them of $5000, $100. The College Bank charged me for discounting a bill receivable for $900, @ 3 months, $14.10. I discounted for R. J. Allen his note for $1000, and charged him discount of $15.

This would appear in Discount and Interest Account of the Ledger as follows:

Dr. DISCOUNT AND INTEREST. *Cr.*

189						189					
June	1	To G. B. Haines & Co.	27	48 37		June	1	By J. B. Lippincott Co	27	13 93	
"	"	" Guarantee Trust Co.	27	100 00		"	"	" Cash	27	15 00	
"	"	" Cash	27	14 10							

Debits show the merchant what borrowing money and collecting his bills before maturity has cost him.

Credits show the merchant what he has made by loaning money and paying his bills before maturity.

MATERIAL ACCOUNTS AND LABOR ACCOUNTS.

In a manufacturing business, instead of charging directly to the Merchandise Account the cost of production, it is a well-approved custom to open a Material Account to which is charged the cost of the raw material, and to open a Labor Account to which is charged the wages expended upon the manufacture of the goods.

When closing the Ledger, Material Account must be credited for the amount of material on hand as shown by the Inventory, and then both of these accounts (Material and Labor) should be closed into Merchandise Account.

They are *Non-speculative Accounts*, and are kept so as to make clear just how much of the cost of the manufactured article arises from labor, and how much from raw material.

Purchases of Raw Material.

June 16, 189 .—Bought of E. A. Greene & Co. 6000 lbs. Mestizo Wool, @ 28c. = $1680. Bought of Sheble & Hill 10,000 lbs. Common Domestic Wool, @ 20c. = $2000.

This would appear in Material Account of the Ledger as follows:

Dr. MATERIAL ACCOUNT. *Cr.*

189						189					
June	16	To E. A. Greene & Co.	29	1680 00		July	1	By Mdse.	29	3680 00	
"	"	" Sheble & Hill	29	2000 00							
				3680 00						3680 00	

Payments to Artisans for Piecework.

June 16, 189 .—Paid Geo. Doll, for week's work at loom, $13. Paid Jos. Cook, for loom work, $14.50. Paid And. Wagner, for designs for carpets, $35.25.

This would appear in the Labor Account of the Ledger as follows:

Dr. LABOR ACCOUNT. *Cr.*

189						189					
June	16	To Geo. Doll	29	13 00		July	1	By Mdse.	29	62 75	
"	"	" Jos. Cook	29	14 50							
"	"	" Andrew Wagner	29	35 25							
				62 75						62 75	

CAPITAL ACCOUNT.

The Capital Account is variously named by book-keepers. By some the name of the Proprietor of the business is used; by others the word "Stock," and some call it the Capital Account. The name Stock is quite aged, but it is often misunderstood by learners as having something to do with the stock of goods on hand when the Inventory is taken. The use of the name of the Proprietor as a caption for this account is growing in favor, and where there is more than one proprietor it is positively necessary that the names of the proprietors should be used.

This account is debited for his liabilities and credited for his resources at the time of beginning business, it is also debited for any withdrawals of capital made by the proprietor and credited for any additional investments made by him; but if the withdrawals made by him are for personal expenses, they should be kept in a personal expense account until the closing of the Ledger, and should then be charged up to the Capital Account in one lump sum. It is also debited at the time of settling the business for the net loss, if one has been made, or credited with the net gain found to have been made at the time of settling business.

In some cases this account is credited with interest on investments, and debited for interest on withdrawals. In other cases no investments are to be accounted for.

The net capital invested in the business is found by subtracting the sum of the debits from the sum of the credits. It is what the business owes the proprietor, because it is the amount by which the resources exceed the liablilities. In an adverse condition of business the sum of the debits may be the larger. If so, it shows net insolvency, which is the amount that the proprietor needs to put into the business to enable the debts to be paid. The net capital is shown by the entry "To Balance" above the ruling, and net insolvency is shown by the entry "By Balance" above the ruling.

Capital Account is a *Non-speculative Account.*

Transactions which belong in the Capital Account.

January 1, 189 .—J. F. Morris and A. B. Lewis have formed a copartnership, under the firm name of Morris & Lewis. Morris invests Merchandise to the amount of $1500; Cash, $2000; Bills Receivable, $1000. The business is to pay off certain of his promissory notes, to the amount of $500, and amounts which he owes—Terry & Co., $600, and Folwell Bros. & Co., $400. The net amount invested by him is, therefore, $3000. A. B. Lewis invests: Cash, $2000; Merchandise, $2500; Bills Receivable, $2000, and the business is to pay off certain of his promissory notes to the amount of $1200. His net investment is, therefore, $5300.

July 1, 189 .—The business is settled, showing a net gain of $6800, one-half of which goes to Lewis and one-half to Morris.

This would appear in the proprietors' Capital Accounts of the Ledger as follows:

Dr. J. F. MORRIS (CAPITAL ACCOUNT). *Cr.*

189						189					
Jan	1	To Bills Payable	32	500	00	Jan.	1	By Mdse.	31	1500	00
"	"	" Terry & Co.	32	600	00	"	"	" Cash	31	2000	00
"	"	" Folwell, Bro. & Co.	32	400	00	"	"	" Bills Receivable	31	1000	00
July	1	" Balance		6400	00	July	1	" Loss and Gain	32	3400	00
				7900	00					7900	00
						189					
						July	1	By Balance		6400	00

Dr. A. B. LEWIS (CAPITAL ACCOUNT). *Cr.*

189						189					
Jan.	1	To Bills Payable	32	1200 00		Jan.	1	By Cash	32	2000 00
July	1	" Balance	32	8700 00		"	"	" Mdse.	32	2500 00
						"	"	" Bills Receivable	32	2000 00
						July	1	" Loss and Gain	32	3400 00
				9900 00						9900 00
						189				
						July	1	By Balance		8700 00

This account will be debited for the business man's liabilities, withdrawals, etc., for the net loss, and sometimes for interest on withdrawals. It is credited for investments of all sorts, net gain, and sometimes interest on investments.

PERSONAL EXPENSE ACCOUNT, OR PRIVATE ACCOUNT.

This account is debited for what the business man takes out for his personal use, or for the maintenance of his family. It is very rarely ever credited. It should not be credited except when the merchant returns some of the money which he had previously drawn. The Account is opened and kept to enable the bookkeeper to charge against the Merchant's Capital Account his personal expenses in one sum.

It is a *Non-speculative Account*, and is closed into the Capital Account at the time of closing the Ledger.

Amounts Drawn Out by a Merchant for Personal and Family Use.

February 1, 189 .—A. B. Lewis drew out, for his own use, $200. March 15th.—He withdrew $300. June 9th.—He drew out $500.

This would appear in the Merchant's Personal Account of the Ledger as follows:

Dr. A. B. LEWIS' PERSONAL EXPENSES. *Cr.*

189						189				
Feb.	1	To Cash	32	200 00		July	1	By A. B. L. Cap. Ac.	32	1000 00
Mar.	15	" do	32	300 00						
June	9	" do	32	500 00						
				1000 00						1000 00

INVENTORY ACCOUNT.

This account is debited for the amount of goods and other property on hand at the time of taking an account of stock, and is credited for the same after the losses and gains have been ascertained.

It is a *Non-speculative Account.*

Account of Stock of Mitchell, Fletcher & Co.

Merchandise, $9763.38. Store Building, $9000. Counters, Shelving, Desks, Chairs, Fireproof Safe, Gas Fixtures, etc., $1625. 100 shares Reading Railroad Stock @ 32, $3200.

This would appear in Inventory Account of the Ledger as follows:

Dr. INVENTORY. *Cr.*

189						189					
July	1	To Mdse.	35	9763	38	July	1	By Mdse.	35	9763	38
"	"	" Real Estate	35	9000	00	"	"	" Real Estate	35	9000	00
"	"	" Store Fixtures	35	1625	00	"	"	" Store Fixtures	35	1625	00
"	"	" Reading Rail Road Stock	35	3200	00	"	"	" Reading Rail Road Stock	35	3200	00
				23,588	38					23,588	38

LOSS AND GAIN ACCOUNT.

Loss and Gain Account is debited with all Losses and credited with all gains. The difference between the sum of the debits and the sum of the credits is the net gain or net loss. If the sum of the debits is the greater, it is a net loss; if the sum of the credits is the greater it is a net gain.

Into this account are brought all the losses and gains which have occurred in the business, and they are here compared and the net gain or loss determined.

It is a *Non-speculative Account*, and closes into the Capital Account.

Schedule of Losses and Gains.

July 1, 189 .—Porter & Coates, on closing their Ledger for the year, find that they have gained: On Merchandise, $21,630.80; on Real Estate sold during the year, $2,800; on Discount and Interest, $963.40; on Penna. R. R. Stock, $1140; on Phila. & Reading R. R. Stock, $813.

They have lost: On Expense Account, $581.60; on Salary Account, $9830; on Rent, $5000.

Their net gain for the year is, therefore, $11,935.60.

This would appear in Loss and Gain Account of the Ledger as follows:

Dr. LOSS AND GAIN. *Cr.*

189						189					
July	1	To Expense	36	581	60	July	1	By Mdse.	36	21,630	80
"	"	" Salary	36	9830	00	"	"	" Real Estate	36	2800	00
"	"	" Rent	36	5000	00	"	"	" Discount and Interest	36	963	40
"	"	" Porter	36	5967	80	"	"	" Pa. R. R. Stock	36	1140	00
"	"	" Coates	36	5967	80	"	"	" P. & R. R. R. Stock	36	813	00
				27,347	20					27,347	20

Debits are losses; Credits are gains.

SHIPMENT ACCOUNTS.

Shipments are names given to accounts to which are charged the cost of goods sent to be sold for our account and at our risk by a Factor, or Bailee, called a Commission Merchant. The account is kept for the purpose of ascertaining the gain or loss on goods sent to a particular person.

At the time of shipping, the account, by whatever name it may be called, is debited for the cost of the merchandise and all expenses incurred in shipping the same. It is credited for the net sum yielded by our goods in the hands of the Commission Merchant.

The shipments are distinguished one from another by the letters of the Alphabet, or the

Numerals, or by naming the person to whom they are sent.

Great care should be taken when crediting the Shipments for net proceeds, to charge them to the Commission Merchant as a Factor, and not as a person, for he holds the business man's money, not as a debt due to the business man, but as the business man's funds in trust until they are remitted, and returned to the proper owner.

These are *Speculative Accounts*, and close into Loss and Gain.

Goods sent to be sold at our risk and on our account, and returns for same.

January 2, 189 .—Shipped and consigned to Charles Berger, to be sold on our account and at our risk, 150 yds. Brussels Carpet, @ 65c., $97.50; 500 yds. Ingrain Carpet, @ 50c., $250.00; 1000 yds. Stair Carpet, @ 45c., $450.00; in all, $797.50. Paid shipping expenses, $7.50. (13th) Received from Charles Berger an account of sales, showing our net proceeds to be $772.56.

This will appear in the Shipment Account of the Ledger as follows:

Dr. SHIPMENT, CHARLES BERGER. *Cr.*

189								189					
Jan.	2	To Mdse.	38	797	50			Jan.	13	By C. Berger, Factor	39	772	56
"	"	" Cash	38	7	50								

Debits show the cost of the goods sent, and also the expenses, and credits what they produce.

SHIPMENTS IN COMPANY.

This is the name given to an account representing the business man's interest in a lot of goods sent to be sold partially at his risk and partially on his account.

Shipment in Company is made debtor for the cost of the merchant's interest at the time the goods are shipped, and it is credited for the net proceeds of his share at the time the commission merchant renders the account of sales.

Shipments in Company are distinguished one from another by letters of the Alphabet or Numerals, in the same manner as Shipments.

Care should be taken at the time of receiving the account sales from the commission merchant to charge the commission merchant as a Factor or Bailee, for the reasons named under the head of Shipment Accounts.

These are *Speculative Accounts*, and close into Loss and Gain.

Goods sent to be sold partially at our risk and partially on our account, and returns for same.

June 1, 189 .—Shipped to Russell & Mason 1000 Bales Cotton, valued at $60,000, on which they are to assume one-fourth of the risk by reason of having paid a part of the purchase price. They are to have a proportionate share of the gains. Paid expenses of shipment, $12.50.

July 3, 189 .—Received account sales from Russell & Mason of my interest in the shipment, showing my net proceeds to be $46,500.

This will appear in the Shipment in Company Account of the Ledger as follows:

Dr. SHIPMENT IN CO. WITH RUSSELL & MASON. A. *Cr.*

189								189					
June	1	To Mdse.	40	45,000	00			July	3	By R. & M., Factors	40	46,500	00
"	"	" Cash	40	9	37								

Debits show the cost of the merchant's interest in the Shipment and the expenses for his share of same; credits show what that interest has yielded him.

FACTOR'S OR BAILEE'S ACCOUNTS.

These are accounts kept by the business man with Commission Merchants engaged in the sale of his goods.

They are debited for the net proceeds reported to the business man by his Commission Merchant on each account sales, and they are credited whenever the money or other property may be sent by the Commission Merchant to the business man.

The employment of the account enables a business man to prove conclusively the relation existing between himself and his Commission Merchant; that the Commission Merchant holds in his hands in trust as the property of the business man anything that may be to the debit of Factor's Account. It enables one to distinguish clearly the difference between debts due by the Factor as an individual and moneys held by him as an Agent, or Factor, or Bailee.

CONSIGNMENTS, SALES ACCOUNTS, Etc.

These are names given to Accounts representing goods received from another business house, to be sold on its account and at its risk, by a Commission Merchant as a Factor, or Bailee, or Agent.

Such Accounts are debited for any expenses incurred in receiving, or handling, or storing the goods, and also for whatever the Commission Merchant may charge for the services rendered by him in selling them, or guaranteeing payment for same. They are credited for what the goods bring and the difference between the amount for which the goods are sold and the charges of the Commission Merchant, either for services rendered or money expended, belongs to the Owner, and is held by the Commission Merchant as the Owner's money, in trust, until it is remitted. Care should be taken, when the Consignment Account is closed, that credit will be given to the Owner as Principal or Bailor.

These are *Non-speculative Accounts;* for, after the Commission Merchant reimburses himself for his outlay and pays himself for his trouble, the balance belongs to the Owner.

MERCHANDISE COMPANY.

This is a name given to an account of goods received from another business man, to be sold partially at his risk and partially at the commission merchant's risk.

Such accounts are debited for the commission merchant's share of their cost, also for moneys expended on them by the commission merchant, and for his services in selling them, as well as for the net proceeds belonging to the shipper. They are credited for the sales of the goods, and close into Loss and Gain.

They are *Speculative Accounts*, and illustrate very clearly the difference between buying goods outright and receiving them to sell them at another person's risk, for the shipper must be credited in his personal account for that part of the cost of the goods on which the commission merchant takes the risk. That is an absolute purchase by the commission merchant of that much of the goods, and he owes for that part or share of them as he owes for any other goods which he buys outright; but for the shipper's net proceeds credit should be given to another account than the personal account of the shipper, called by his name; with the word Principal, or Bailor, added, for such money belongs to the shipper, and is held by the commission merchant in trust for him.

PRINCIPAL'S OR BAILOR'S ACCOUNTS.

These accounts enable the Commission Merchant to show with clearness that in certain transactions he is acting as an agent,

and that certain credits on his books are not debts due by him, but money or property belonging to his principal, held by him in trust.

They are credited whenever an Account Sales is rendered, and the Consignment Account, or Sales Account, is closed out. They are debited whenever the money, or its equivalent, is remitted.

They are *Non-speculative Accounts.*

COMMISSION ACCOUNT. GUARANTEE ACCOUNT.

These Accounts are credited for the Commission charged by the Commission Merchant to his customers for his services in selling their goods.

It is very rarely ever debited; such a circumstance could only arise by the Commission Merchant getting some other one in his line of business to aid him in selling the goods and giving them a part of his Commission for doing it. In any such case Commission Account would be debited.

Guarantee Account is sometimes associated with Commission Account; that is to say, the Commission allowed by the business man to the Commission Merchant may be intended to cover the pay for selling the goods, and also a recompense for guaranteeing the soundness of the accounts made by selling the goods payable at some future time. In some lines of business 2½ per cent. is allowed for selling and 2½ per cent. for guaranteeing, and the 5 per cent. is credited to the one account called "Commission and Guarantee Account." Some book-keepers may prefer to keep a Commission Account by itself and a Guarantee Account by itself.

They are *Speculative Accounts*, and close into Loss and Gain.

PRACTICAL DEDUCTIONS.

Every business transaction in the hands of a double-entry book-keeper requires:

First.—Some Ledger Account, or Accounts, to be debited, and some Ledger Account, or Accounts, to be credited.

Second.—In every business transaction, the debit, or sum of the debits, carried to the Ledger, must equal the credit, or sum of the credits, taken to that account.

The fundamental law of book-keeping by double entry is, that there should be as much placed upon the debit side as there is placed upon the credit side, and no business can be transacted, however slight, which does not require at least one debit and one credit to be made in the Ledger.

TRIAL BALANCES.

One of the most perplexing positions the book-keeper ever occupies is at the time when he takes off a trial balance. This is made up from the face of the Ledger, and consists of the names of all open Ledger accounts, with their debit balances in one column and their credit balances in another column. If the debit balances amount to a sum equal to the total of the credit balances, the trial balance is said "to come out all right," but the debit side of the Ledger can be equal to the credit side of the Ledger, and yet the Ledger contain many errors; and were the book-keeper furnished with no better proof of the correctness of his work he would have very little ground for the satisfaction which is universally felt by a book-keeper when his trial balance does thus "come out right." A little reflection will cause it to appear that the debit and credit balances of the Ledger can be equal and yet errors like these abound:

1. Errors in entering a transaction in books of original entry, as, for instance, a sale in the Invoice Book, or a purchase in the Sales Book; the omission of the whole of a transaction. All of which may be

described in a general way as mis-entries in the books of original entry.

2. If the transaction is incorrectly Journalized; that is to say, Bills Payable should be credited when we get somebody else's note discounted, or anything of that character. To be spoken of in general as mistakes in debiting or crediting.

3. Any mistake in posting, provided the right amount has been taken to the right side of the Ledger, but to a wrong account. Thus, in posting, if a debit belonging to A's account is taken to the debit side of B's account, and the right amount is used, an error will be produced in two accounts, and yet there will not be any disturbance of the equality of the footings of the trial balance. Any transposition of figures, if the transposition occurs on both sides. These errors may be spoken of in general as mis-posts.

A practical, satisfactory check upon one in book-keeping is the custom, almost universal, of sending out statements of accounts to debtors at the beginning of each month.

If the recipient should find he is overcharged, the book-keeper would learn his mistake.

Trial balances are taken off at two stated periods, one at the end of each month showing the debtor and creditor balances of all open accounts, and one taken off after the Ledger is closed, showing the debtor and creditor balances of all accounts which remain open at that time. When the entries have been correctly made in the Ledger, and the trial balance taken off without mistake, the debit and credit columns of balances will equal each other.

Nothing more, however, is proven by either of the trial balances than that the Ledger is in balance—a satisfactory thing for every book-keeper to know.

A Ledger, and the Trial Balance of Same.

June 30, 189 .—The Ledger shows the following balances on this date: Merchandise, Dr., $2547.40; Cash, Dr., $1547.84; Bills Payable, Cr., $365; John Thomas, Dr., $145.10; Richard Mann, Dr., $75; George Brown, Cr., $325.15; Alfred Douglas, Cr., $61.89; Store Fixtures, Dr. $360; Expense, Dr., $76.70; Students' Capital Account, Cr., $4000.

This will appear in the Monthly Trial Balance as follows:

TRIAL BALANCE, JUNE, 189 .

		Balances.			
		Dr.		*Cr.*	
1	Merchandise	2547	40		
3	Cash	1547	84		
7	Bills Payable			365	00
9	John Thomas	145	10		
10	Richard Mann	75	00		
11	Geo. Brown			325	15
12	Alfred Douglass			61	89
13	Store Fixtures	360	00		
14	Expense	76	70		
15	Students' Capital Account			4000	00
		4752	04	4752	04

CLOSING THE LEDGER.

A very interesting branch of a bookkeeper's work is closing the Ledger. There are two general ways of closing accounts: "To or By Loss and Gain" and "To or By Balance." To close an account is to make both sides equal. In the process of closing the Ledger, all the losses and gains that have occurred in the business are gathered together in the Loss and Gain Account, and there compared. The gains are placed upon the credit side; the losses upon the debit side. When the credit side is the greater, the account is closed "To Capital Account," and shows a net gain. The opposite entry, "By Loss and Gain," is made in the Capital Account, and increases the capital. When the debtor side is the greater, the account is closed, "By Capital Account," and shows a net loss. The opposite entry, "To Loss and Gain," is made in the Capital Account, and decreases the capital.

Red ink should not be used at all, unless it is used for a definite purpose. A safe general rule is to use black ink in the Ledger in the recording of all entries which come from other books, and to use red ink in making entries which are made for the purpose of closing and bringing down the balances to the new accounts. Custom is not uniform, however, regarding this rule. Very many of those who use red ink for closing, prefer to use black ink in making the transfers of the closing entries.

In closing the Ledger, it is necessary to remember the classification of Ledger Accounts, separating clearly those which are speculative and show losses and gains from those which are non-speculative and show resources and liabilities. To the former class, showing losses and gains, belong Expense, Discount and Interest, Commission, Insurance, Merchandise, etc., etc. To the latter class, showing resources and liabilities, belong accounts with Individuals, Firms and Corporations, Cash, Bills Receivable, Bills Payable, etc.

Unless the property possessed in the business has all been sold, it is a necessary step in closing the Ledger to take an account of Stock and to credit the respective accounts heretofore charged with the amount of property now on hand. Nor should a Ledger be closed until a first trial balance has been taken off, and the Ledger found to be in balance, and also, there should be a test of the correctness of the Ledger by comparing the Cash and Bills Receivable balances with the Cash on hand and the Bills Receivable on hand, and the sending out and receiving of Statements.

First.—Close all Speculative Accounts into "Loss and Gain" account by journalizing and posting.

Second.—Close "Loss and Gain" account into the Capital Account by journalizing and posting.

Third.—Close "Inventory" account by crediting it and debiting the corresponding accounts.

Fourth.—Then close all accounts now unclosed, "To" or "By Balance," ruling them up and bringing down the balance on the opposite side of each account so closed.

All entries "To" or "By Balance" to be made in *red ink.*

Fifth.—After the Ledger is closed take off a trial balance to ascertain if the Ledger is still in balance.

If the work is correctly done, the two sides of the trial balance will be equal, for the reason that in the case in which the business is possessed of more assets than liabilities, there will be found upon the debit side all the resources, and on the credit side all the liabilities, together with the net

capital, which is the excess of resources over liabilities; and the net capital properly appears on the same side with the liabilities, because the business owes to its proprietor that which he has invested in it; and if all the assets were collected, dollar for dollar of their face value, as they appear on the books, and the liabilities were paid out of them, the net capital would appear as a surplus, to be paid over to the proprietor. So, in adversity, the debit side of the trial balance will, as before, consist of the resources, together with the net insolvency, which, taken together, will equal the credit, or liability side, for the reason that the proprietor would have to furnish, from other resources, the amount of the insolvency of the business to enable the liabilities to be discharged, and the net insolvency is properly placed with the resources for this reason.

BANK DEPOSITS.

No reference has been made in this book to a ledger account with a bank, as it is not customary, and is objectionable. Money in bank is generally regarded as money on hand in another safe, an account of which appears, or should appear, on the stub of the check book. When money is deposited the liability of the bank for the money so deposited is acknowledged by the receiving teller by an entry on the debit side of a pass book, called the bank book. From this the bookkeeper should copy the amount and add it to the previous balance in bank, as shown by the stub in his check book. From this he should deduct the amount of each check drawn, the difference showing the amount in bank subject to draft. This may not always agree with the balance as shown by the bank book when settled at bank, for the reason that a business man subtracts from his bank balance the amount of the check at the time of its issue. The bank does not charge the account of a customer for a check drawn until it is presented and paid at bank. In keeping the check book there are many advantages arising from entering on the stub.

The Philadelphia Clearing House Association furnishes to the business community quite a number of useful rules to be observed by those doing business with a bank. We quote a few as follows:

"If you write or stamp over your endorsement upon all checks which you send to be deposited to your credit in bank the words, 'For deposit to our credit,' it will prevent their being used for any other purpose."

Another is that you "Do not give your checks to strangers." Another is that "It is desired that all your checks for large amounts should be presented for payment by a person known to the paying teller or other officer of the bank."

Another is: "In conformity with the rules adopted by all banks of this city and members of the Clearing House Association, you are hereby notified that you are held responsible as endorser for the non-payment of all checks upon other banks of this city, members of said Association, deposited by you as cash in this bank, until the close of the business day next succeeding that on which such checks are deposited. This bank receiving such checks only for collection on your account through the exchanges of the Clearing House. Upon all other checks and drafts deposited by you as cash your responsibility as endorser continues until payment has been ascertained by this bank."

PROTEST.

Besides these suggestions it is well to remember that not only with checks but with promissory notes held by you and secured to you by endorsement, that you lose the security of the endorsement if you fail to protest those not paid at maturity.

HOW TO DO BUSINESS

CORRECT FORMS FOR NOTES, BILLS, CHECKS, DRAFTS, RECEIPTS, ETC.

ALL persons transacting business find it necessary to write various business forms. Among those in most frequent use are Receipts, Orders, Bills of articles purchased, Promissory Notes, Checks, Drafts, etc.

To better understand these, it is well to be acquainted with the meaning of the various commercial terms to be constantly seen in our general reading.

COMMERCIAL TERMS.

$—— means *dollars*, being a contraction of U. S., which was formerly placed before any denomination of money, and meant, as it means now, United States Currency.

£—— means *pounds*, English money.

@ stands for *at* or *to*. ℔ for *pound*, and bbl. for *barrel;* ℀ for *per* or *by the*. Thus, Butter sells at 20@30c ℀ ℔, and Flour at $8@12 ℀ bbl.

% for *per cent.* and # for *number*.

June 1—Wheat sells at $1.20@1.25, "seller July." *Seller July* means that the person who sells the wheat has the privilege of delivering it at any time during the month of July.

Selling *short*, is contracting to deliver a certain amount of grain or stock, at a fixed price, within a certain length of time, when the seller has not the stock on hand. It is for the interest of the person selling "short," to depress the market as much as possible, in order that he may buy and fill his contract at a profit. Hence the "shorts" are termed "bears."

Buying *long*, is to contract to purchase a certain amount of grain or shares of stock at a fixed price, deliverable within a stipulated time, expecting to make a profit by the rise of prices. The "longs" are termed "bulls," as it is for their interest to "operate" so as to "toss" the prices upward as much as possible.

PROMISSORY NOTES.

A promissory note is a promise or engagement in writing to pay a specified sum at a time therein limited, or on demand, or at sight, to a person therein named, or his order or assigns, or to the bearer. The person making the note is called the drawer or maker.

A note is void when founded upon fraud. Thus, a note obtained from a person when intoxicated, or obtained for any reason which is illegal, cannot be collected. If, however, the note is transferred to an innocent holder, the claim of fraud or no value received will not avail. The party holding the note can collect it if the maker is able to pay it. A note given upon Sunday is also void in some States.

Notes bear interest only when it is so expressed; after they become due, however, they draw the legal rate of the State. If it is intended to have the note draw more than the legal rate of interest, after maturity, the

words should so specify in the body of the note as follows: "with interest at the rate of —— per cent. until paid." Notes payable on demand or at sight, draw no interest until after presentation or demand of the same has been made, unless they provide for interest from date on their face; they then draw the legal rate of interest of the State.

If "with interest" is included in the note, it draws the legal rate of the State where it is given from the time it is made.

If the note is to draw a special rate of interest higher than the legal, but not higher than the law allows, the rate must be specified.

If the note is made payable to a person or order, to a person or bearer, to a person or his assigns, or to the cashier of an incorporated company or order, such notes are negotiable.

When transferring the note, the indorser frees himself from responsibility, so far as the payment is concerned, by writing on the back, above his name, "Without recourse to me in any event."

The simple indorsement of the name of the person selling the note, which serves as a transfer, upon the back of the same, is not in some States a guarantee for the payment of the note at maturity. When it is designed particularly to be a guarantee, it should be so stated on the back of the note, as follows:

JOHN MEEK.

"For value received, I (or we) hereby guarantee the payment of the within note at maturity, or at any time thereafter, with interest at —— per cent. until paid; and agree to pay all costs or expenses paid or incurred in collecting the same."

JOHN MEEK.

When a note is made payable at a definite period after date, three days beyond the time expressed on the face of the note (called days of grace) are allowed to the person who is to pay the same, within which to make such payment. Notes payable "on demand" are not entitled to days of grace.

If a note is payable at a bank, and is held there on the day upon which it falls due, until the usual hour for closing, ready for receiving payment thereon, no further demand upon the maker is necessary, in order to charge the indorser. The demand must, in all cases, be made upon the last of the days of grace; a demand before that time passing for nothing as against the indorser.

The days of grace, which must be computed according to the laws of the State where the note is payable, are to be reckoned exclusive of the day when the note would otherwise become due, and without deduction for Sundays or holidays; in which latter case, by special enactments in most of the States, notes are deemed to become due upon the secular day next preceding such days. Thus, a note, due upon the twenty-fifth day of December, is payable on the twenty-fourth, as the day when due is Christmas day; if the twenty-fourth chance to be Sunday, it is due upon the twenty-third.

In order to charge an indorser, the note, if payable at a particular place, must be presented for payment at the place upon the very day it becomes due; if no place of payment be named, it must be presented, either to the maker personally, or at his place of business, during business hours, or at his dwelling house, within reasonable hours; if payable by a firm, a presentment may be made to either of the partners, or at the firms place of business; if given by several persons jointly, not partners, the demand must be made upon all. If the note has been lost, mislaid, or destroyed, the holder must still make a regular and formal demand offering the party, at the same time, a sufficient indemnity for failure to return the note.

NEGOTIABLE NOTE.

With interest at legal rate per cent. from date.

$500 CHICAGO, ILL., Jan. 1, 18—.

Three Months after date, for value received, *I* promise to pay *Charles Joy,* or order, *Five Hundred Dollars,* with interest.

William Coyle.

NEGOTIABLE NOTE.

With interest at ten per cent. after maturity, until paid.

$100. DES MOINES, IOWA., April 2, 18—.

For value received, *ninety days* after date, *I* promise to pay *William Dobson,* or order, *One Hundred Dollars,* with interest at *ten* per cent. after maturity, until paid.

Charles Gordon.

BANK CHECK.

No. 57. PHILADELPHIA, *July 14,* 18—.

PENN NATIONAL BANK.

Pay to the order of *F. J. Williams,* = = = =

One Hundred and = = = = = = = $\frac{50}{100}$ Dollars.

$100.50

J. W. Davis.

ENDORSEMENT OF CHECK ON BACK.

Pay to order of
Hiram Anderson.
F. W. Davis.

BANK DRAFT.

No. 398. FIRST NATIONAL BANK.

$500 JERSEY CITY, *Nov. 3,* 18—.

For value received, pay to the order of *W. H. Sadler, Baltimore, Md., Five Hundred* Dollars, which charge with or without advice to this Bank.

George W. Conklin, Cashier.
John W. Omberson, Asst Cashier.

To Third National Bank,
Baltimore, Md.

SIGHT DRAFT.

$300 NEW YORK, *Sept. 12,* 18—.

At sight pay *S. S. Packard,* or order, *Three Hundred* Dollars, and charge the same to the account of

To I. C. Bryant,
Buffalo, N. Y.

P. R. Spencer.

LEGAL FORMS

A HAND-BOOK OF LAW

THE following compilation of business law contains the essence of a large amount of legal verbiage: 1. If a note is lost or stolen, it does not release the maker; he must pay it, if the consideration for which it was given and the amount can be proven.

2. Notes bear interest only when so stated.

3. Principals are responsible for the acts of their agents.

4. Each individual in a partnership is responsible for the whole amount of the debts of the firm, except in cases of *special partnership*.

5. Ignorance of the law excuses no one.

6. The law compels no one to do impossibilities.

7. An agreement without consideration is void.

8. A note made on Sunday is void.

9. Contracts made on Sunday cannot be enforced.

10. A note by a minor is voidable. A contract made by a minor is void.

11. A contract made by a lunatic is void.

12. A note obtained by fraud, or from a person in a state of intoxication, cannot be collected.

13. It is a fraud to conceal a fraud.

14. Signatures made with a lead-pencil are good in law.

15. A receipt for money is not always conclusive.

16. The acts of one partner bind all the rest.

17. The maker of an "accommodation" bill or note (one for which he has received no consideration, having lent his name or credit for the accommodation of the holder) is not bound to the person accommodated, but is bound to all other parties, precisely as if there was a good consideration.

18. No consideration is sufficient in law if it be *illegal* in its nature.

19. Checks or drafts must be presented for payment without unreasonable delay.

20. Checks or drafts should be presented during business hours; but in this country, except in the case of banks, the time extends through the day and evening.

21. If the drawee of a check or draft has changed his residence, the holder must use due and reasonable diligence to find him.

22. If one who holds a check, as payee or otherwise, transfers it to another, he has a right to insist that the check be presented that day, or, at farthest, on the day following.

23. A note indorsed in blank (the name of the indorser only written) is transferable by delivery, the same as if made payable to bearer.

24. If time of payment of a note is not named, it is payable on demand.

25. The time of payment of a note must not depend upon a contingency. The promise must be absolute.

26. A bill may be written upon any kind of paper, either with ink or pencil.

27. The payee should be named in the note, unless it is payable to bearer.

28. An indorsee has a right of action against all whose names were on the bill when he received it.

29. If the letter containing a protest of non-payment be put into the post-office, any miscarriage does not affect the party giving notice. Notice of protest may be sent either to the place of business or of residence of the party notified.

30. The holder of a note may give notice of protest either to all the previous indorsers or only to one of them; in case of the latter he must select the last indorser, and the last must give notice to the last before him, and so on. Each indorser must send notice the same day or the day following. Neither Sunday nor any legal holiday is counted in reckoning time in which notice is to be given.

31. The loss of a note is not sufficient excuse for not giving notice of protest.

32. If two or more persons, as partners, are justly liable on a note or bill, due notice to one of them is sufficient.

33. If a note or bill is transferred as security, or even as payment of a pre-existing debt, the debt revives if the note or bill be dishonored.

34. An indorsement may be written on the face or back.

35. An indorser may prevent his own liability to be sued by writing "without recourse" or similar words.

36. An oral agreement must be proved by evidence.

A written agreement proves itself. The law prefers written to oral evidence, because of its precision.

37. No evidence can be introduced to *contradict* or *vary* a written contract; but it may be received in order to explain it, when such explanation is needed.

38. Written instruments are to be construed and interpreted by the law according to the simple, customary and natural meaning of the words used.

39. The finder of negotiable paper, as of all other property, must make reasonable efforts to find the owner, before he is entitled to appropriate it for his own purposes. If the finder conceal it, he is liable to the charge of larceny or theft.

40. Joint payees of a bill or note, who are not partners, must all join in an indorsement.

41. One may make a note payable to his own order and indorse it in blank. He must write his name across its back or face, the same as any other indorser.

42. After the death of a holder of a bill or note, his executor or administrator may transfer it by his indorsement.

43. The husband who acquires a right to a bill or note which was given to the wife, either before or after marriage, may indorse it.

44. "Acceptance" applies to bills and not to notes. It is an engagement on the part of the person on whom the bill is drawn to pay it according to its tenor. The usual way is to write across the face of the bill the word "accepted."

45. An account outlawed according to statute of state where it is contracted cannot be collected unless judgment note has been given.

Business Agreements

AN agreement or contract is an arrangement entered into by two or more persons, by which each binds himself to perform certain specified acts within a designated time.

Agreements may be verbal, but it is better in all cases, and absolutely essential in matters of importance, to express them in writing.

Fraud annuls all contracts and obligations, and the party so wronged is relieved of his obligation by law. If both the parties to an agreement act fraudulently, neither can take advantage of the fraud of the other; nor can one who acts fraudulently set his own fraud aside for his benefit.

Agreements should be prepared and signed in duplicate, triplicate, etc., according to the number of persons concerned in them. Each party should have a copy, and should carefully preserve it.

General Form of Agreement.

THIS AGREEMENT, made this twenty-fifth day of September, in the year of our Lord one thousand eight hundred and ninety—, between John Swan, of Livonia, County of Livingston, State of New York, party of the first part, and Hiram Bolt, of the same place, party of the second part,

WITNESSETH, That the said John Swan, party of the first part, hereby covenants and agrees, that he will deliver to the said Hiram Bolt, party of the second part, during the month of September, one hundred cords of hickory wood, at the woodyard of the said Hiram Bolt, as follows: twenty cords to be delivered on or before the 10th of October; twenty cords more to be delivered on or before the 15th of October; twenty cords more on or before the 20th of October; twenty cords more on or before the 25th of October, and the remaining twenty cords on or before the 30th of October; the entire quantity of one hundred cords to be delivered by the 30th of October.

And the said Hiram Bolt, party of the second part, in consideration of the prompt fulfilment of this agreement by the said John Swan, party of the first part, agrees and binds himself to pay to the said John Swan, the sum of three dollars for each and every cord of hickory wood delivered to him by the said John Swan or his agents, and to pay for each cord of wood as soon as it is delivered at his woodyard.

In case of the failure of either party to this contract to make good his promises, it is hereby stipulated and agreed that the party so failing shall forfeit to the other party the sum of one hundred dollars in cash as fixed and settled damages.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

JOHN SWAN. [SEAL.]
HIRAM BOLT. [SEAL.]

Signed, sealed and delivered in presence of

Laws of Partnership

A PARTNERSHIP is an agreement between two or more persons for joining together their money, goods, labor, and skill, or any or all of them, in some lawful commerce or business, under an understanding, express or implied from the nature of the undertaking, that the parties to the agreement shall share between them the profits and loss arising therefrom.

It is not necessary that each partner should contribute an equal amount of money to be entitled to an equal share of the profits. An individual may contribute his knowledge of the business to be engaged in, or his skill, or his labor, or all three, the other partner or partners contributing a specified sum of money, or the money and their services. The agreement must state exactly what is contributed.

The act of one partner binds all the others. Thus, if one partner gives a negotiable note for the use of the firm, and signs it with his individual name, such signature binds all the other partners.

A person who contributes his money to the capital of a firm and shares its profits, without allowing his name to be used, is termed a secret or silent partner. A person contributing to the capital and sharing the profits of the concern, but taking no active part in its management, is termed a sleeping or dormant partner. Both of these are liable to creditors for the debts of the concern, even though they did not know them to be members of the firm.

In forming partnerships, it is generally the rule to form them for a stated period, which must be expressed in the agreement. This is termed a limited partnership, and expires "by limitation" at the end of the period named.

A Partnership Agreement.

THIS AGREEMENT, made this tenth day of June, 189–, between James Smith, of Salem, Washington County, N. Y., of the one part, and Henry Smythe, of the same place, of the other part, witnesseth:

The said parties agree to associate themselves as co-partners, for a period of five years from this date, in the business of buying and selling hardware and such other goods and commodities as belong in that line of trade; the name and style of the firm to be "Smith & Smythe."

For the purpose of conducting the business of the aboved named partnership, James Smith has, at the date of this writing, invested Five Thousand Dollars, as capital stock, and the said Henry Smythe has paid in the like sum of Five Thousand Dollars, both of which amounts are to be expended and used in common, for the mutual advantage of the parties hereto, in the management of their business.

It is further agreed that once every year, or oftener, should either party desire, a full, just and accurate exhibit shall be made to each other, or to their executors, administrators or representatives, of the losses, receipts, profits and increase made by reason of, or arising from, such co-partnership. And after such exhibit is made, the surplus profit, if such there be, resulting from the business, shall be divided between the subscribing partners, share and share alike.

[*Here state amount to be drawn out annually by each party.*]

It is also agreed that in case of a misunderstanding arising with the partners hereto which cannot be settled between themselves, such difference of opinion shall be settled by arbitration, upon the following conditions, to wit: Each party to choose one arbitrator, which two thus elected shall choose a third; the three thus chosen to determine the merits of the case, and arrange the basis of a settlement.

IN WITNESS WHEREOF, The undersigned hereto set their hands the day and year first above written.

JAMES SMITH.
HENRY SMYTHE.

Signed in presence of
JOHN JONES,
SAMUEL BROWN.

Deeds

IN this country, no lands can be transferred excepting by a deed, which must be properly signed, sealed, witnessed, acknowledged, delivered, and recorded. In some of the States, seals are not necessary to the validity of a deed.

A deed must be delivered in order to render it valid. There is no special form necessary to constitute a proper delivery. If the deed comes into the possession of the grantee with the knowledge and consent of the grantor, however it may have been gotten possession of, it is a valid delivery. If a man makes a deed and fails to deliver it, and dies with it in his possession, the deed is of no effect whatever. A deed to a married woman may be delivered either to her or to her husband.

A deed must be recorded to be valid That is, the grantee must deliver it to the Recorder of Deeds, or other official appointed by law for that purpose, who must cause it to be copied in full in a book kept in his office for that purpose. A deed is regarded as recorded from the moment it is placed in the hands of this officer, and he generally writes upon it the year, month, day, hour, and minute when he received it.

Warranty Deed with Covenants.

THIS INDENTURE, Made this eighteenth day of March, in the year of our Lord 189–, between Ben Cooper, of Ramsey, County of Fayette, State of Illinois, and Mary, his wife, of the first part, and L. Y. Rood, of the same place, of the second part.

WITNESSETH, That the said party of the first part, for and in consideration of the sum of Three Thousand Dollars in hand, paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained, and sold, and by these presents do grant, bargain and sell, unto the said party of the second part, his heirs and assigns, all the following described lot, piece, or parcel of land, situated in the town of Ramsey, in the County of Fayette, and State of Illinois, to wit:

[*Here describe the property.*]

Together with all and singular the hereditaments and appurtenances thereunto belonging or in any wise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof; and all the estate, right, title, interest, claim and demand whatsoever, of the said party of the first part, either in law or equity, of, in, and to the above bargained premises, with the hereditaments and appurtenances: To have and to hold the said premises above bargained and described, with the appurtenances, unto the said party of the second part, his heirs and assigns, forever. And the said Ben Cooper, and Mary, his wife, parties of the first part, hereby expressly waive, release and relinquish unto the said party of the second part, his heirs, executors, administrators, and assigns, all right, title, claim, interest, and benefit whatever, in and to the above described premises, and each and every part thereof, which is given by or results from all laws of this State pertaining to the exemption of homesteads.

And the said Ben Cooper and Mary Cooper, his wife, party of the first part, for themselves and their heirs, executors, and administrators, do covenant, grant, bargain, and agree, to and with the said party of the second part, his heirs and assigns, that at the time of the ensealing and delivery of these presents they were well seized of the premises above conveyed, as of a good, sure, perfect, absolute, and indefeasible estate of inheritance in law, and in fee simple, and have good right, full power, and lawful authority to grant, bargain, sell, and convey the same, in manner and form aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, and encumbrances of what kind or nature soever, and the above bargained premises in the quiet and peaceable possession of the said party of the second part, his heirs and assigns, against all and every person or persons lawfully claiming or to claim the whole or any part thereof, the said party of the first part shall and will warrant and forever defend.

In testimony whereof, the said parties of the first part have hereunto set their hands and seals the day and year first above written.

BEN COOPER. [SEAL.]
MARY COOPER. [SEAL.]

Mortgages

A MORTGAGE is a deed conveying real estate to a creditor, as security for a debt. It conveys the property to him as fully and absolutely as though it were sold outright, with this difference, that the debtor retains by the terms of the deed the right to pay the debt and redeem the property within a specified time.

It is usual for the mortgage to contain an agreement that the mortgagor shall keep the premises insured in a certain sum for the benefit of the mortgagee. Where no such stipulation is made, and the mortgagee insures the premises, he cannot recover the cost of the insurance from the mortgagor.

Should a mortgagor erect buildings upon mortgaged land, the mortgagee, on taking possession, becomes the owner of these buildings also. If, however, the mortgagee erects buildings upon lands on which he holds a mortgage, the mortgagor, upon redeeming the land, becomes the owner of such buildings without paying the mortgagee for them. Such matters may, and should always, be regulated by an agreement between the parties.

Real Estate Mortgage to Secure Payment of Money.

THIS INDENTURE, Made this nineteenth day of October, in the year of our Lord, 189–, between W. H. Harrison, of Urbana, County of Champaign, and State of Illinois, and Helen, his wife, party of the first part, and Robert Fairchild, party of the second part.

WHEREAS, The said party of the first part is justly indebted to the said party of the second part, in the sum of Four Thousand Dollars, secured to be paid by two certain promissory notes (bearing even date herewith), the one due and payable at the First National Bank at Champaign, Ill., with interest, on the nineteenth day of October, in the year 189–; the other due and payable at the First National Bank at Champaign, Ill., with interest, on the nineteenth day of October, 189–.

NOW, THEREFORE, THIS INDENTURE WITNESSETH, That the said party of the first part, for the better securing the payment of the money aforesaid, with interest thereon, according to the tenor and effect of the said two promissory notes above mentioned; and, also, in consideration of the further sum of one dollar to them in hand paid by the said party of the second part, at the delivery of these presents, the receipt whereof is hereby acknowledged, have granted, bargained, sold, and conveyed, and by these presents do grant, bargain, sell, and convey, unto the said party of the second part, his heirs and assigns, forever, all that certain parcel of land, situate, etc.

[*Describing the premises.*]

To have and to hold the same, together with all and singular the tenements, hereditaments, privileges, and appurtenances thereunto belonging or in any wise appertaining. And also, all the estate, interest, and claim whatsoever, in law as well as in equity, which the party of the first part have in and to the premises hereby conveyed unto the said party of the second part, his heirs and assigns, and to their only proper use, benefit, and behoof. And the said W. H. Harrison, and Helen, his wife, party of the first part, hereby expressly waive, relinquish, release, and convey unto the said party of the second part, his heirs, executors, administrators, and assigns, all right, title, claim, interest, and benefit whatever, in and to the above described premises, and each and every part thereof, which is given by or results from all laws of this State pertaining to the exemption of homesteads.

PROVIDED ALWAYS, and these presents are upon this express condition, that if the said party of the first part, their heirs, executors, or administrators, shall well and truly pay, or cause to be paid, to the said party of the second part, his heirs, executors, administrators, or assigns, the aforesaid sums of money, with such interest thereon, at the time and in the manner specified in the above mentioned promissory notes, according to the true intent and meaning thereof, then, in that case, these presents and everything herein expressed, shall be absolutely null and void.

IN WITNESS WHEREOF, the said party of the first part hereunto set their hands and seals the day and year first above written.

W. H. HARRISON. [L. S.]
HELEN HARRISON. [L. S.]

Landlords and Tenants

LEASES should be written. No particular form of words is essential, but the lease should state in the clearest manner the terms and conditions of the agreement, so that nothing may be left to dispute between the landlord and tenant. The law does not recognize verbal promises as binding. Therefore the lease must state explicitly all the covenants between the parties.

When the landlord desires to prevent his tenant from sub-letting a part or the whole of the premises, he must provide for it in the lease. A person holding a lease which does not contain this prohibition can sub-let at his pleasure.

The lease should definitely state the period for which it is given. If no time is specified the tenant can hold the property for one year, but no longer. A tenant-at-will cannot vacate the property without giving notice of his intention, nor can he be put out without being given notice of the landlord's desire to regain possession of the property. The laws in the various States are quite uniform as to the time of notice required. If the rent be payable quarterly, three months' notice must be given. If it be payable at more frequent periods, then the notice must equal in length the period of the payment. If the rent is payable monthly, a month's notice is sufficient; if weekly, a week's notice will answer.

A lease given for a specified time, as one year, expires at the end of that time, and the tenant may leave without giving notice, or the landlord may put him out without notice.

A lease should be recorded, whether the law requires it or not. Such record binds a subsequent purchaser of the property to assume all the obligations of the former landlord as expressed in the lease, and is a necessary legal form.

Form of Lease of a Farm and Buildings.

THIS AGREEMENT, Made this first day of January, 189–, between Peleg Ross, of Shawnee County, State of Kansas, party of the first part, and O. B. Scott, of the county and State aforesaid, party of the second part,

WITNESSETH, That the said Peleg Ross lets, and the said O. B. Scott agrees to take and hold of him as tenant all that parcel of land, with the buildings and improvements appertaining and belonging to it, situate—

[*Here insert an accurate and careful description of the property.*]

From the first day of February next ensuing, upon the terms following, that is to say:

Said tenant shall be deemed a tenant from year to year;

That said tenant enter and take possession of said premises on the first day of February next;

That either party may determine the tenancy by a notice in writing, three months before the expiration of any year from the first day of February next preceding;

That the rent of said premises shall be five hundred dollars per annum, payable in half yearly payments on, etc., and on, etc.;

That the said tenant agrees to cause the following repairs to be made, viz.: [*Here state the repairs agreed upon*];

That said tenant on quitting the farm shall receive such pecuniary compensation for improvements in fencing, etc., as two arbitrators (one of which arbitrators shall be nominated by each party, and if either neglect to nominate his arbitrator, the other party may nominate both arbitrators) shall award, which arbitrators shall abate according to the benefit derived by the tenant from such repairs, improvements, and additions, and take into consideration how far, at the expiration of the tenancy, they may be beneficial to the estate.

IN WITNESS WHEREOF, The said parties have hereunto set their hands and seals the day and year first above written.

PELEG ROSS. [SEAL.]
O. B. SCOTT. [SEAL.]

Last Wills and Testaments

ANY one may make a will who is of legal age and sound mind. A married woman cannot, however, make a will unless the law of the State in which her property is situated vests her with the separate ownership of it.

The legal age for making a will devising real estate is twenty-one years. In most of the States a male, aged eighteen years, or a female, aged sixteen years, may bequeath personal property by will.

The person making a will, if a male, is called the testator; if a female, the testatrix.

A will is of no effect during the life of the maker, and may be set aside, altered or replaced by a new will, at any time previous to the death of the maker.

The *last will* made annuls all previous wills. It is, therefore, the duty of the testator to state distinctly in the first part that this is his last will. If he has made other wills, he should state that by this instrument he revokes all other wills.

The will should close with a formal statement that it is the deliberate act of the testator, and that it is properly signed and sealed by him.

All wills must be witnessed. This is a very important part of making a will, and should be performed in strict accordance with the laws of the State in which it is made. Some of the States require two, and some three credible witnesses. It is a good plan for the testator to have the will witnessed by *three* persons, in all cases, whether the law requires it or not.

The witnesses to a will should *see* the testator sign it. He should perform the act in their presence. If the testator cannot write, or is too feeble by reason of old age or sickness to do so, he may make his mark in the presence of the witnesses.

Where a will is made, and the testator subsequently disposes of any or all the property described in the will, the will is invalidated to the extent of the alienation of the property.

Where a man makes a will, and subsequently marries and has children, the law regards the will as revoked, unless the testator, after such acts, makes a new will confirming the original one.

A person cannot be an executor to a will if at the time of the probate of the will he is a minor, a drunkard, a convict, or of unsound mind.

Wills are of two kinds, written and verbal or nuncupative.

A codicil is an addition to a will designed to modify or add new provisions to a will. It does not revoke the will. Though there can be but one will, there may be any number of codicils.

A will made by a single woman is revoked by her subsequent marriage. By the terms of her marriage settlement she may, however, provide for the right to dispose of her property.

A wife cannot be deprived of her dower by any will of her husband. A husband may, however, bequeath to his wife a certain sum in lieu of her dower.

General Form of Will.

I, Thomas Henry Howard, of the City of Baltimore, State of Maryland, declare this to be my last will and testament.

1. I give and bequeath to my wife, Catharine Howard, all the fixtures, prints, books, paintings, linen, china, household goods, furniture, chattels, and effects, other than money, or securities for money, which shall, at my death, be in or about my

house, No. 458 Park avenue, in the said City of Baltimore.

2. I also give and bequeath unto my said wife, the sum of fifty thousand dollars in the preferred stock of the Baltimore & Ohio Railroad Company, now held by me.

3. I give and devise to my son, George Frederick Howard, his heirs and assigns, forever, all that certain brick dwelling and lot of ground, known as Number 529, in St. Paul street, in the said City of Baltimore, together with all the hereditaments and appurtenances thereto belonging, or in anywise appertaining; to have and to hold the premises above described to the said George Frederick Howard, his heirs and assigns, forever.

4. I give and bequeath to my said son, George Frederick Howard, the sum of one hundred thousand dollars, in the bonds of the United States of America, known as the five-twenty bonds, being all the securities of the United States now held by me.

5. I also bequeath to each of my domestic servants who may be living with me at the time of my death, the sum of two hundred dollars.

6. All the rest, residue, and remainder of my real and personal estate, I give, devise, and bequeath in equal shares, to my said wife, Catharine Howard, and to my son, George Frederick Howard, their heirs and assigns forever.

7. I appoint my said son and my said friend, Alfred W. Lee, executors of this my will, and desire that they shall not be required to give any security for the performance of their duties.

IN WITNESS WHEREOF, I, Thomas Henry Howard, have hereunto set my hand and seal this twenty-fifth day of May, 189–.

THOMAS HENRY HOWARD. [SEAL.]

Statutes of Limitations

Showing the Limit of Time for Notes, Accounts and Judgments in the Various States and Territories.

NOTE.—"J. P." means judgments of Justices of the Peace and other Courts not of record. Sealed instruments and notes with witnesses, in some of the States, are not within these limitations, nor are judgments rendered in other States. The lien of a judgment on real estate in some States is shorter in time than the period of limitation. Special limitations apply to claims presented to executors or administrators and disputed by them.

States, Territories, &c.	NOTES.	ACCOUNTS.	JUDGMENTS.
Alabama	6 years.	Stated accounts, 6 years; open accounts, 3 years.	10 years; J. P. from 3½ to 5 years.
Alaska	6 years.	6 years.	10 years.
Arizona	5 years.	3 years; between merchant and merchant, 4 years.	5 years.
Arkansas	5 years.	3 years.	10 years.
California	Made in State, 4 years; outside, 2 years.	2 years.	5 years.
Colorado	6 years.	6 years.	10 yrs.; J. P. 7 yrs.
Connecticut	6 years.	6 years.	17 years.
Delaware	6 years.	3 years.	10 years.
District of Columbia.	3 years.	3 years.	12 years; J. P. 3 years if execution issued in 1 year.
Florida	5 years.	4 years.	20 yrs.; J. P. 7 yrs.

States, Territories, &c.	NOTES.	ACCOUNTS.	JUDGMENTS.
Georgia	6 years.	4 years.	7 years.
Idaho	5 years.	4 years.	6 years.
Illinois	10 years.	5 years.	20 yrs.; J. P. 5 yrs.
Indiana	10 years.	6 years.	20 years.
Indian Territory	5 years.	3 years.	Unsettled.
Iowa	10 years.	5 years.	20 yrs.; J. P. 10 yrs.
Kansas	5 years.	3 years.	5 years.
Kentucky	15 years; if discounted in bank, 5 years.	Between merchant and merchant, 5 years; between merchant and consumer, 2 years.	15 years.
Louisiana	5 years.	3 years.	10 years.
Maine	6 years.	6 years.	20 years.
Manitoba	6 years.	6 years.	10 years.
Maryland	3 years.	3 years.	12 years.
Massachusetts	6 years.	6 years.	20 yrs.; J. P. 6 yrs.
Michigan	6 years.	6 years.	10 yrs.; J. P. 6 yrs.
Minnesota	6 years.	6 years.	10 years.
Mississippi	6 years.	3 years; when acknowledged in writing, 6 years.	7 years.
Missouri	10 years.	5 years.	10 years.
Montana	8 years.	5 years.	6 years.
Nebraska	5 years.	4 years.	5 years.
Nevada	6 years.	4 years.	6 years.
New Brunswick	6 years.	6 years.	20 yrs.; J. P. 6 yrs.
Newfoundland	6 years.	6 years.	20 years.
New Hampshire	6 years.	6 years.	20 years.
New Jersey	6 years.	6 years.	20 years.
New Mexico	6 years.	4 years.	7 years.
New York	6 years.	6 years.	20 yrs.; J. P. 6 yrs.
North Carolina	3 years.	3 years.	10 yrs.; J. P. 7 yrs.
North Dakota	6 years.	6 years.	10 years.
Nova Scotia	6 years.	6 years.	20 yrs.; J. P. 4 yrs.
Ohio	15 years.	6 years.	21 years.
Oklahoma Territory	5 years.	3 years.	5 years.
Ontario	6 years.	6 years.	20 years.
Oregon	6 years.	6 years.	10 years.
Pennsylvania	6 years.	6 years.	20 years.
Prince Edward Island	6 years.	6 years.	20 years; County Court, 10 years
Quebec	5 years.	5 years.	30 years.
Rhode Island	6 years.	6 years.	20 years.
South Carolina	6 years.	6 years.	20 years.
South Dakota	6 years.	6 years.	20 years.
Tennessee	6 years.	6 years.	10 years.

States, Territories, &c.	NOTES.	ACCOUNTS.	JUDGMENTS.
Texas	4 years.	On stated and open accounts, 2 years; on mutual and current accounts, concerning trade of merchandise between merchant and merchant, 4 years.	10 years.
Utah	4 years.	2 years.	5 years.
Vermont	6 years.	6 years.	8 years.
Virginia	5 years.	Between merchant and merchant, 3 years; others, 2 years.	If execution returned unsatisfied, 20 years; if no such return made, 10 years.
Washington	5 years.	3 years.	6 years.
West Virginia . . .	10 years.	5 years.	10 years.
Wisconsin	6 years.	6 years.	20 yrs.; J. P. 6 yrs.
Wyoming	5 years.	8 years.	5 years; but under some circumstances may be revived after that time.

LIGHTNING CALCULATOR
OR
READY RECKONER

BY the use of the following tables the cost of any number of articles at any given price can be ascertained at a glance. The first column of figures shows the number of articles; the second column of figures shows the total cost. For example, 17 articles at ¼ cent each, amount to 4¼ cents; 98 articles amount to 24½ cents. No one can fail to see the convenience of these tables. By consulting them you not only save time, but you are sure of the accuracy of the reckoning. Almost instantly the desired result can be obtained and it is certain to be correct.

At ¼ Cent.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.¼	18	.4½	35	.8¾	52	.13	69	.17¼	86	.21½
2	.½	19	.4¾	36	.9	53	.13¼	70	.17½	87	.21¾
3	.¾	20	.5	37	.9¼	54	.13½	71	.17¾	88	.22
4	.1	21	.5¼	38	.9½	55	.13¾	72	.18	89	.22¼
5	.1¼	22	.5½	39	.9¾	56	.14	73	.18¼	90	.22½
6	.1½	23	.5¾	40	.10	57	.14¼	74	.18½	91	.22¾
7	.1¾	24	.6	41	.10¼	58	.14½	75	.18¾	92	.23
8	.2	25	.6¼	42	.10½	59	.14¾	76	.19	93	.23¼
9	.2¼	26	.6½	43	.10¾	60	.15	77	.19¼	94	.23½
10	.2½	27	.6¾	44	.11	61	.15¼	78	.19½	96	.24
11	.2¾	28	.7	45	.11¼	62	.15½	79	.19¾	98	.24½
12	.3	29	.7¼	46	.11½	63	.15¾	80	.20	100	.25
13	.3¼	30	.7½	47	.11¾	64	.16	81	.20¼	200	.50
14	.3½	31	.7¾	48	.12	65	.16¼	82	.20½	300	.75
15	.3¾	32	.8	49	.12¼	66	.16½	83	.20¾	400	1.00
16	.4	33	.8¼	50	.12½	67	.16¾	84	.21	500	1.25
17	.4¼	34	.8½	51	.12¾	68	.17	85	.21¼	1000	2.50

At ½ Cent.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	. ½	32	.16	63	.31½
2	. 1	33	.16½	64	.32
3	. 1½	34	.17	65	.32½
4	. 2	35	.17½	66	.33
5	. 2½	36	.18	67	.33½
6	. 3	37	.18½	68	.34
7	. 3½	38	.19	69	.34½
8	. 4	39	.19½	70	.35
9	. 4½	40	.20	71	.35½
10	. 5	41	.20½	72	.36
11	. 5½	42	.21	73	.36½
12	. 6	43	.21½	74	.37
13	. 6½	44	.22	75	.37½
14	. 7	45	.22½	76	.38
15	. 7½	46	.23	78	.39
16	. 8	47	.23½	80	.40
17	. 8½	48	.24	82	.41
18	. 9	49	.24½	84	.42
19	. 9½	50	.25	86	.43
20	.10	51	.25½	88	.44
21	.10½	52	.26	90	.45
22	.11	53	.26½	92	.46
23	.11½	54	.27	94	.47
24	.12	55	.27½	96	.48
25	.12½	56	.28	98	.49
26	.13	57	.28½	100	.50
27	.13½	58	.29	200	1.
28	.14	59	.29½	300	1.50
29	.14½	60	.30	400	2.
30	.15	61	.30½	500	2.50
31	.15½	62	.31	1000	5.

At 1 Cent.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	. 1	32	.32	63	.63
2	. 2	33	.33	64	.64
3	. 3	34	.34	65	.65
4	. 4	35	.35	66	.66
5	. 5	36	.36	67	.67
6	. 6	37	.37	68	.68
7	. 7	38	.38	69	.69
8	. 8	39	.39	70	.70
9	. 9	40	.40	71	.71
10	.10	41	.41	72	.72
11	.11	42	.42	73	.73
12	.12	43	.43	74	.74
13	.13	44	.44	75	.75
14	.14	45	.45	76	.76
15	.15	46	.46	78	.78
16	.16	47	.47	80	.80
17	.17	48	.48	82	.83
18	.18	49	.49	84	.84
19	.19	50	.50	86	.86
20	.20	51	.51	88	.88
21	.21	52	.52	90	.90
22	.22	53	.53	92	.92
23	.23	54	.54	94	.94
24	.24	55	.55	96	.96
25	.25	56	.56	98	.98
26	.26	57	.57	100	1.
27	.27	58	.58	200	2.
28	.28	59	.59	300	3.
29	.29	60	.60	400	4.
30	.30	61	.61	500	5.
31	.31	62	.62	1000	10.

At 2 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	. 2	32	.64	63	1.26
2	. 4	33	.66	64	1.28
3	. 6	34	.68	65	1.30
4	. 8	35	.70	66	1.32
5	.10	36	.72	67	1.34
6	.12	37	.74	68	1.36
7	.14	38	.76	69	1.38
8	.16	39	.78	70	1.40
9	.18	40	.80	71	1.42
10	.20	41	.82	72	1.44
11	.22	42	.84	73	1.46
12	.24	43	.86	74	1.48
13	.26	44	.88	75	1.50
14	.28	45	.90	76	1.52
15	.30	46	.92	78	1.56
16	.32	47	.94	80	1.60
17	.34	48	.96	82	1.64
18	.36	49	.98	84	1.68
19	.38	50	1.	86	1.72
20	.40	51	1.02	88	1.76
21	.42	52	1.04	90	1.80
22	.44	53	1.06	92	1.84
23	.46	54	1.08	94	1.88
24	.48	55	1.10	96	1.92
25	.50	56	1.12	98	1.96
26	.52	57	1.14	100	2.
27	.54	58	1.16	200	4.
28	.56	59	1.18	300	6.
29	.58	60	1.20	400	8.
30	.60	61	1.22	500	10.
31	.62	62	1.24	1000	20.

At 5 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	. 5	32	1.60	63	3.15
2	.10	33	1.65	64	3.20
3	.15	34	1.70	65	3.25
4	.20	35	1.75	66	3.30
5	.25	36	1.80	67	3.35
6	.30	37	1.85	68	3.40
7	.35	38	1.90	69	3.45
8	.40	39	1.95	70	3.50
9	.45	40	2.	71	3.55
10	.50	41	2.05	72	3.60
11	.55	42	2.10	73	3.65
12	.60	43	2.15	74	3.70
13	.65	44	2.20	75	3.75
14	.70	45	2.25	76	3.80
15	.75	46	2.30	78	3.90
16	.80	47	2.35	80	4.
17	.85	48	2.40	82	4.10
18	.90	49	2.45	84	4.20
19	.95	50	2.50	86	4.30
20	1.	51	2.55	88	4.40
21	1.05	52	2.60	90	4.50
22	1.10	53	2.65	92	4.60
23	1.15	54	2.70	94	4.70
24	1.20	55	2.75	96	4.80
25	1.25	56	2.80	98	4.90
26	1.30	57	2.85	100	5.
27	1.35	58	2.90	125	6.25
28	1.40	59	2.95	150	7.50
29	1.45	60	3.	175	8.75
30	1.50	61	3.05	200	10.
31	1.55	62	3.10	225	11.25

At 10 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.10	32	3.20	63	6.30
2	.20	33	3.30	64	6.40
3	.30	34	3.40	65	6.50
4	.40	35	3.50	66	6.60
5	.50	36	3.60	67	6.70
6	.60	37	3.70	68	6.80
7	.70	38	3.80	69	6.90
8	.80	39	3.90	70	7.
9	.90	40	4.	71	7.10
10	1.	41	4.10	72	7.20
11	1.10	42	4.20	73	7.30
12	1.20	43	4.30	74	7.40
13	1.30	44	4.40	75	7.50
14	1.40	45	4.50	76	7.60
15	1.50	46	4.60	78	7.80
16	1.60	47	4.70	80	8.
17	1.70	48	4.80	82	8.20
18	1.80	49	4.90	84	8.40
19	1.90	50	5.	86	8.60
20	2.	51	5.10	88	8.80
21	2.10	52	5.20	90	9.
22	2.20	53	5.30	92	9.20
23	2.30	54	5.40	94	9.40
24	2.40	55	5.50	96	9.60
25	2.50	56	5.60	98	9.80
26	2.60	57	5.70	100	10.
27	2.70	58	5.80	125	12.50
28	2.80	59	5.90	150	15.
29	2.90	60	6.	175	17.50
30	3.	61	6.10	200	20.
31	3.10	62	6.20	225	22.50

At 25 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.25	32	8.	63	15.75
2	.50	33	8 25	64	16.
3	.75	34	8.50	65	16.25
4	1.	35	8.75	66	16.50
5	1 25	36	9.	67	16.75
6	1.50	37	9.25	68	17.
7	1.75	38	9.50	69	17.25
8	2.	39	6.75	70	17.50
9	2.25	40	10.	71	17.75
10	2.50	41	10.25	72	18.
11	2.75	42	10.50	73	18.25
12	3.	43	10.75	74	18.50
13	3.25	44	11.	75	18.75
14	3.50	45	11.25	76	19.
15	3.75	46	11.50	78	19.50
16	4.	47	11.75	80	20.
17	4.25	48	12.	82	20.50
18	4.50	49	12.25	84	21.
19	4.75	50	12.50	86	21.50
20	5.	51	12.75	88	22.
21	5.25	52	13.	90	22.50
22	5.50	53	13.25	92	23.
23	5.75	54	13.50	94	23.50
24	6.	55	13.75	96	24.
25	6.25	56	14.	98	24.50
26	6.50	57	14.25	100	25.
27	6.75	58	14.50	125	31.25
28	7.	59	14.75	150	37.50
29	7.25	60	15.	175	43.75
30	7.50	61	15.25	200	50.
31	7.75	62	15.50	225	56.25

At 12½ Cents, or ⅛ of a Dollar.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.12½	32	4.	63	7.87½
2	.25	33	4.12½	64	8.
3	.37½	34	4.25	65	8.12½
4	.50	35	4.37½	66	8.25
5	.62½	36	4.50	67	8.37½
6	.75	37	4.62½	68	8.50
7	.87½	38	4.75	69	8.62½
8	1.	39	4.87½	70	8.75
9	1.12½	40	5.	71	8.87½
10	1.25	41	5.12½	72	9.
11	1.37½	42	5.25	73	9.12½
12	1.50	43	5.37½	74	9.25
13	1.62½	44	5.50	75	9.37½
14	1.75	45	5.62½	76	9.50
15	1.87½	46	5.75	78	9.75
16	2.	47	5.87½	80	10.
17	2.12½	48	6.	82	10.25
18	2.25	49	6.12½	84	10.50
19	2.37½	50	6.25	86	10.75
20	2.50	51	6.37½	88	11.
21	2.62½	52	6.50	90	11.25
22	2.75	53	6.62½	92	11.50
23	2.87½	54	6.75	94	11.75
24	3.	55	6.87½	96	12.
25	3.12½	56	7.	98	12.25
26	3.25	57	7.12½	100	12.50
27	3.37½	58	7.25	125	15.62½
28	3.50	59	7.37½	150	18.75
29	3.62½	60	7.50	175	21.87½
30	3.75	61	7.62½	200	25.
31	3.87½	62	7.75	225	28.12½

At 33⅓ Cents, or ⅓ of a Dollar.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.33⅓	32	10.66⅔	63	21.
2	.66⅔	33	11.	64	21.33⅓
3	1.	34	11.33⅓	65	21 66⅔
4	1.33⅓	35	11.66⅔	66	22.
5	1.66⅔	36	12.	67	22.33⅓
6	2.	37	12.33⅓	68	22.66⅔
7	2.33⅓	38	12.66⅔	69	23.
8	2.66⅔	39	13.	70	23.33⅓
9	3.	40	13.33⅓	71	23.66⅔
10	3.33⅓	41	13.66⅔	72	24.
11	3.66⅔	42	14.	73	24.33⅓
12	4.	43	14.33⅓	74	24.66⅔
13	4.33⅓	44	14.66⅔	75	25.
14	4.66⅔	45	15.	76	25.33⅓
15	5.	46	15.33⅓	78	26.
16	5.33⅓	47	15.66⅔	80	27.
17	5.66⅔	48	16.	82	27.33⅓
18	6.	49	16.33⅓	84	28.
19	6.33⅓	50	16.66⅔	86	28.66⅔
20	6 66⅔	51	17.	88	29.66⅔
21	7.	52	17.33⅓	90	30.
22	7.33⅓	53	17.66⅔	92	30.66⅔
23	7.66⅔	54	18.	94	31.33⅓
24	8.	55	18.33⅓	96	32.
25	8.33⅓	56	18.66⅔	98	32.66⅔
26	8.66⅔	57	19.	100	33.33⅓
27	9.	58	19.33⅓	125	41.66⅓
28	9.33⅓	59	19.66⅔	150	50.
29	9.66⅔	60	20.	175	58.33⅔
30	10.	61	20 33⅓	200	66.66⅔
31	10 33⅓	62	20 66⅔	225	75.

At 43¾ Cents, or 7/16 of a Dollar.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.43¾	32	14.	63	27.56¼
2	.87½	33	14 43¾	64	28.
3	1.31¼	34	14.87½	65	28.43¾
4	1.75	35	15.31¼	66	28.87½
5	2.18¾	36	15.75	67	29.31¼
6	2.62½	37	16.18¾	68	29.75
7	3.06¼	38	16.62½	69	30.18¾
8	3.50	39	17.06¼	70	30.62½
9	3.93¾	40	17.50	71	31.06¼
10	4.37½	41	17.93¾	72	31.50
11	4.81¼	42	18.37½	73	31.93¾
12	5.25	43	18.81¼	74	32.37½
13	5.68¾	44	19 25	75	32.81¼
14	6.12½	45	19.68¾	76	33.25
15	6.56¼	46	20.12½	78	34.12½
16	7.	47	20.56¼	80	35.
17	7.43¾	48	21.	82	35.87½
18	7.87½	49	21.43¾	84	36.75
19	8.31¼	50	21.87½	86	37.62½
20	8.75	51	22.31¼	88	38.50
21	9.18¾	52	22.75	90	39.37½
22	9.62½	53	23.18¾	92	40.25
23	10.06¼	54	23.62½	94	41.12½
24	10.50	55	24.06¼	96	42.
25	10.93¾	56	24.50	98	42.87½
26	11.37½	57	24.93¾	100	43.75
27	11.81¼	58	25.37½	125	54.68¾
28	12.25	59	25.81¼	150	65.62½
29	12.68¾	60	26.25	175	76.56¼
30	13.12½	61	26.68¾	200	87.50
31	13.65¼	62	27.12½	225	98.43¾

At 50 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.50	32	16.	63	31.50
2	1.	33	16.50	64	32.
3	1.50	34	17.	65	32.50
4	2.	35	17.50	66	33.
5	2.50	36	18.	67	33.50
6	3.	37	18.50	68	34.
7	3.50	38	19.	69	34.50
8	4.	39	19.50	70	35.
9	4.50	40	20.	71	35.50
10	5.	41	20.50	72	36.
11	5.50	42	21.	73	36.50
12	6.	43	21.50	74	37.
13	6.50	44	22.	75	37.50
14	7.	45	22.50	76	38.
15	7.50	46	23.	78	39.
16	8.	47	23.50	80	40.
17	8.50	48	24.	82	41.
18	9.	49	24.50	84	42.
19	9.50	50	25.	86	43.
20	10	51	25.50	88	44.
21	10.50	52	26.	90	45.
22	11.	53	26.50	92	46.
23	11.50	54	27.	94	47.
24	12.	55	27.50	96	48.
25	12.50	56	28.	98	49.
26	13.	57	28.50	100	50.
27	13.50	58	29.	125	62.50
28	14.	59	29.50	150	75.
29	14.50	60	30.	175	87.50
30	15.	61	30.50	200	100.
31	15.50	62	31.	225	112.50

At 56¼ Cents, or 9/16 of a Dollar.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.56¼	32	18.	63	35.43¾
2	1.12½	33	18.56¼	64	36
3	1.68¾	34	19.12½	65	36.56¼
4	2.25	35	19.68¾	66	37.12½
5	2.81¼	36	20.25	67	37.68¾
6	3.37½	37	20.81¼	68	38.25
7	3.93¾	38	21.37½	69	38.81¼
8	4.50	39	21.93¾	70	39.37½
9	5.06¼	40	22.50	71	39.93¾
10	5.62½	41	23.06¼	72	40.50
11	6.18¾	42	23.62½	73	41.06¼
12	6.75	43	24.18¾	74	41.62½
13	7.31¼	44	24.75	75	42.18¾
14	7.87½	45	25.31¼	76	42.75
15	8.43¾	46	25.87½	78	43.87½
16	9.	47	26.43¾	80	45.
17	9.56¼	48	27.	82	46.12½
18	10.12½	49	27 56¼	84	47.25
19	10.68¾	50	28.12½	86	48.37½
20	11.25	51	28.68¾	88	49.50
21	11.81¼	52	29.25	90	50.62½
22	12.37½	53	29.81¼	92	51.75
23	12.93¾	54	30.37½	94	52.87½
24	13.50	55	30.93¾	96	54.
25	14.06¼	56	31.50	98	55.12½
26	14.62½	57	32.06¼	100	56.25
27	15.18¾	58	32.62½	125	70.31¼
28	15.75	59	33.18¾	150	84.37½
29	16.31¼	60	33.75	175	98.43¾
30	16.87½	61	34.31¼	200	112.50
31	17.43¾	62	34.87½	225	126.56¼

At 87½ Cents, or ⅞ of a Dollar.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	.87½	32	28.	63	55.12½
2	1.75	33	28.87½	64	56.
3	2.62½	34	29.75	65	56.87½
4	3.50	35	30.62½	66	57.75
5	4.37½	36	31.50	67	58.62½
6	5.25	37	32.37½	68	59.50
7	6.12½	38	33.25	69	60.37½
8	7.	39	34.12½	70	61.52
9	7.87½	40	35.	71	62.12½
10	8.75	41	35.87½	72	63.
11	9 62½	42	36.75	73	63.87½
12	10.50	43	37.62½	74	64.75
13	11.37½	44	38.50	75	65.62½
14	12.25	45	39.37½	76	66.50
15	13.12½	46	40.25	78	68.25
16	14.	47	41.12½	80	70.
17	14.87½	48	42.	82	71.75
18	15.75	49	42.87½	84	73.50
19	16.62½	50	43.75	86	75.25
20	17.50	51	44.62½	88	77.
21	18.37½	52	45.50	90	78.75
22	19.25	53	46.37½	92	80.50
23	20.12½	54	47.25	94	82.25
24	21.	55	48.12½	96	84.
25	21.87½	56	49.	98	85.75
26	22.75	57	49.87½	100	87.50
27	23.62½	58	50.75	125	109.37½
28	24.50	59	51.62½	150	131.25
29	25.37½	60	52.50	175	153.12½
30	26.25	61	53.37½	200	175.
31	27.12½	62	54.25	225	196.87½

At $1.25 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	1.25	36	45.	71	88.75
2	2.50	37	46.25	72	90.
3	3.75	38	47.50	73	91.25
4	5.	39	48.75	74	92.50
5	6.25	40	50.	75	93.75
6	7.50	41	51.25	76	95.
7	8.75	42	52.50	77	96.25
8	10.	43	53.75	78	97.50
9	11.25	44	55.	79	98.75
10	12.50	45	56.25	80	100.
11	13.75	46	57.50	81	101.25
12	15.	47	58.75	82	102.50
13	16.25	48	60.	83	103.75
14	17.50	49	61.25	84	105.
15	18.75	50	62.50	85	106.25
16	20.	51	63.75	86	107.50
17	21.25	52	65.	87	108.75
18	22.50	53	66.25	88	110.
19	23.75	54	67.50	89	111.25
20	25.	55	68.75	90	112.50
21	26.25	56	70.	91	113.75
22	27.50	57	71.25	92	115.
23	28.75	58	72.50	93	116.25
24	30.	59	73.75	94	117.50
25	31.25	60	75.	95	118.75
26	32.50	61	76.25	96	120.
27	33.75	62	77.50	97	121.25
28	35.	63	78.75	98	122.50
29	36.25	64	80.	99	123.75
30	37.50	65	81.25	100	125.
31	38.75	66	82.50	125	156.25
32	40.	67	83.75	150	187.50
33	41.25	68	85.	175	218.75
34	42.50	69	86.25	200	250.
35	43.75	70	87.50	225	281.25

At $1.50 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	1.50	36	54.	71	106.50
2	3.	37	55.50	72	108.
3	4.50	38	57.	73	109.50
4	6.	39	58.50	74	111.
5	7.50	40	60.	75	112.50
6	9.	41	61.50	76	114.
7	10.50	42	63.	77	115.50
8	12.	43	64.50	78	117.
9	13.50	44	66.	79	118.50
10	15.	45	67.50	80	120.
11	16.50	46	69.	81	121.50
12	18.	47	70.50	82	123.
13	19.50	48	72.	83	124.50
14	21.	49	73.50	84	126.
15	22.50	50	75.	85	127.50
16	24.	51	76.50	86	129.
17	25.50	52	78.	87	130.50
18	27.	53	79.50	88	132.
19	28.50	54	81.	89	133.50
20	30.	55	82.50	90	135.
21	31.50	56	84.	91	136.50
22	33.	57	85.50	92	138.
23	34.50	58	87.	93	139.50
24	36.	59	88.50	94	141.
25	37.50	60	90.	95	142.50
26	39.	61	91.50	96	144.
27	40.50	62	93.	97	145.50
28	42.	63	94.50	98	147.
29	43.50	64	96.	99	148.50
30	45.	65	97.50	100	150.
31	46.50	66	99.	125	187.50
32	48.	67	100.50	150	225.
33	49.50	68	102.	175	262.50
34	51.	69	103.50	220	300.
35	52.50	70	105.	250	337.50

At $1.75 Cents.

No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.	No.	Dols. Cts.
1	1.75	18	31.50	35	61.25	52	91.	69	120.75	86	150.50
2	3.50	19	33.25	36	63.	53	92.75	70	122.50	87	152.25
3	5.25	20	35.	37	64.75	54	94.50	71	124.25	88	154.
4	7.	21	36.75	38	66.50	55	96.25	72	126.	89	155.75
5	8.75	22	38.50	39	68.25	56	98.	73	127.75	90	157.50
6	10.50	23	40.25	40	70.	57	99.75	74	129.50	91	159.25
7	12.25	24	42.	41	71.75	58	101.50	75	131.25	92	161.
8	14.	25	43.75	42	73.50	59	103.25	76	133.	93	162.75
9	15.75	26	45.50	43	75.25	60	105.	77	134.75	94	164.50
10	17.50	27	47.25	44	77.	61	106.75	78	136.50	96	168.
11	19.25	28	49.	45	78.75	62	108.50	79	138.25	98	171.50
12	21.	29	50.75	46	80.50	63	110.25	80	140.	100	175.
13	22.75	30	52.50	47	82.25	64	112.	81	141.75	125	218.75
14	24.50	31	54.25	48	84.	66	113.75	82	143.50	150	262.50
15	26.25	32	56.	49	85.75	65	115.50	83	145.25	175	306.25
16	28.	33	57.75	50	87.50	67	117.25	84	147.	200	350.
17	29.75	34	59.50	51	89.25	68	119.	85	148.75	225	393.75

ENCYCLOPEDIA
OF
VALUABLE INFORMATION

Presidents of the United States.

THE various States, during January, 1789, held elections for choosing electors by whom the States were to be represented in the selection of their first President. On the first Wednesday in February of the same year, 1789, the electors as appointed, met in their respective States to cast their votes for President and Vice-President. After some further action, we have the historic record that, on the first Wednesday in March, George Washington was chosen President and John Adams was selected for Vice-President.

Washington being at Mt. Vernon, Va., considerable time was necessary to advise him of his election. His journey north was slow, owing to the ovations and enthusiastic welcomes that greeted him at every point. Upon his arrival at New York a delay in the ceremony of inauguration, incidental to preparations of getting Federal Hall in readiness, was occasioned; so that it was not until April 30th that everything was in shape for his being sworn into office. John Adams took the oath as Vice-President, April 21st.

The salary to be paid the President was a source of much discussion in Congress, in view of the fact that the Constitution required that the President should receive a compensation for his services. Washington had stated that he did not wish any salary. The limits suggested by Congress ranged from $15,000 to $70,000. It was finally placed at $25,000. This remained the presidential salary until Grant's second term, when it was increased to $50,000, March 3, 1873.

Valuable Information.

The following tables give very complete information respecting our National Government. They treat of the education, marriage, etc., of the different Presidents, giving statistics also respecting the Vice-Presidents, and furnishing the figures in the popular and electorial votes.

The names of the political parties are also given, one of which it will be seen has a history dating back to 1801. There is also a table showing the annual salaries of the principal United States officers. The records show that there have been six Secretaries of State who became Presidents. No Secretaries of the Treasury, the Navy, or the Interior, nor any Postmasters, or Attorney Generals have become President. The reader will also notice interesting facts concerning Washington and a great number of tables.

Education, Marriage, Children, Etc., of the Presidents.

	EDUCATIONAL ADVANTAGES.	PROFESSION.	EARLY VOCAT'ON	ANCESTRY.	FATHER'S BUSINESS.
Washington ...	Common school.....	Planter...	Surveyor.	English.....	....Planter
Adams.....	Graduate, Harvard College, 1755	Lawyer...	Teacher ..	English.....	.. .Farmer
Jefferson.....	Graduate, College William and Mary, 1762..... ...	Lawyer...	Lawyer...	Welsh.....	....Planter
Madison.....	Graduate, Princeton College, 1771.....	Lawyer...	Lawyer...	English	....Planter
Monroe.....	Entered College William and Mary.....	Politician	Lawyer...	Scotch.....	....Planter
Adams, J. Q..	Graduate, Harvard College, 1787.....	Lawyer...	Lawyer...	English.....	....Lawyer
Jackson.....	Self-taught.....	Lawyer...	Lawyer..	Scotch-Irish	....Farmer
Van Buren....	Academy	Lawyer...	Lawyer...	Dutch.....	....Farmer
Harrison, W..	Entered Hampden, Sydney College.....	Army.....	Medicine.	English.....	.Statesman
Tyler.....	Graduate, College William and Mary, 1806.....	Lawyer...	Lawyer...	English.....	.....Jurist
Polk.....	University of North Carolina.....	Lawyer...	Lawyer...	Scotch-Irish	....Farmer
Taylor	Common school.....	Army.....	Soldier....	English.....	....Planter
Fillmore.....	Public school.....	Lawyer...	Tailor.....	English.....	....Farmer
Pierce.....	Graduate, Bowdoin College, 1824.....	Lawyer...	Lawyer...	English.....	....Farmer
Buchanan.....	Graduate, Dickinson's College, 1809.....	Lawyer...	Lawyer...	Scotch-Irish	..Merchant
Lincoln.....	Self-taught.....	Lawyer...	Farmer...	English.....	....Farmer
Johnson.....	Self-taught.....	Politician	Tailor.....	English.....	.....Sexton
Grant.....	Graduate, West Point Mil. Academy, 1843.....	Army.....	Tanner....	Scotch.....	.....Tanner
Hayes.....	Graduate, Kenyon College, O., 1842.....	Lawyer...	Lawyer...	Scotch.....	..Merchant
Garfield.....	Graduate, William's College, 1856.....	Lawyer...	Teacher...	English.....	....Farmer
Arthur.....	Graduate, Union College, 1848.....	Lawyer...	Teacher...	Scotch-Irish	Clergym'n
Cleveland.....	Common school.....	Lawyer...	Teacher...	English.....	Clergym'n
Harrison, B...	Graduate, Miami University, O., 1851...	Lawyer...	Lawyer...	English.....	.....Farmer
McKinley.....	Allegheny College, 1861.....	Lawyer...	Lawyer...	Scotch.....	..Mechanic

Vice-Presidents.

ADMIN.	VICE-PRESIDENT	ELECTED			BORN		DIED		
		DATE	FROM	AGE	DATE	BIRTHPLACE	DATE	WHERE	AGE
1–2	John Adams[1]	1789	Mass.	54	1735	Quincy, Mass.	1826	Quincy, Mass.	91
3	Thomas Jefferson[1]	1796	Va.	53	1743	Shadwell, Va.	1826	Monticello, Va.	83
4	Aaron Burr	1800	N. Y.	44	1756	Newark, N. J.	1836	Richmond Co., N. Y.	80
5–6	George Clinton[2]	1804	N. Y.	65	1739	Ulster Co., N. Y.	1812	Washington, D. C.	73
7	Elbridge Gerry[2]	1812	Mass.	68	1744	Marblehead, Mass.	1814	Washington, D. C.	70
8–9	D. D. Tompkins	1816	N. Y.	42	1774	Scarsdale, N. Y.	1825	Richmond Co., N. Y.	51
10–11	John C. Calhoun[3]	1824	S. C.	42	1782	Abbeville, S. C.	1850	Washington, D. C.	68
12	Martin Van Buren[1]	1832	N. Y.	50	1782	Kinderhook, N. Y.	1862	Kinderhook, N. Y.	80
13	Richard M. Johnson	1836	Ky.	56	1780	Louisville, Ky.	1850	Frankfort, Ky.	70
14	John Tyler[4]	1840	Va.	50	1790	Greenway, Va.	1862	Richmond, Va.	72
15	George M. Dallas	1844	Penn.	52	1792	Philadelphia, Pa.	1864	Philadelphia, Pa.	72
16	Millard Fillmore[4]	1848	N. Y.	48	1800	Summer Hill, N. Y.	1874	Buffalo, N. Y.	74
17	Wm. Rufus King[2]	1852	Ala.	66	1786	Sampson Co., N. C.	1853	Dallas Co., Ala.	67
18	John C. Breckinridge	1856	Ky.	35	1821	Lexington, Ky.	1875	Lexington, Ky.	54
19	Hannibal Hamlin	1860	Me.	51	1809	Paris, Me.	1891	Portland, Me.	82
20	Andrew Johnson[4]	1864	Tenn.	56	1808	Raleigh, N. C.	1875	Greenville, Tenn.	67
21	Schuyler Colfax	1868	Ind.	45	1823	New York, N. Y.	1885	Mankato, Minn.	62
22	Henry Wilson[2]	1872	Mass.	60	1812	Farmingham, N. H.	1875	Washington, D. C.	63
23	William A. Wheeler	1876	N. Y.	57	1819	Malone, N. Y.	1387	Malone, N. Y.	68
24	Chester A. Arthur[4]	1880	N. Y.	50	1830	Fairfield, Vt.	1886	New York, N. Y.	56
25	Thomas A. Hendricks[2]	1884	Ind.	65	1819	Muskingum Co., O.	1885	Indianapolis, Ind.	66
26	Levi P. Morton	1888	N. Y.	64	1824	Shoreham, Vt.			
27	Adlai E. Stevenson	1892	Ills.	57	1835	Christian Co., Ky.			
28	Garret A. Hobart	1896	N. J.	52	1844	Monmouth Co., N. J.			
29									
30									

[1] Later elected President. [2] Died in office. [3] Resigned. [4] Succeeded to Presidency.

Popular and Electoral Votes for President.

YEAR.	CANDIDATES.	PARTY.	Popular Vote.	Elec. Vote.
1828.	Andrew Jackson	Democrat	647,231	178
1828.	John Q. Adams	Feder	509,097	83
1832.	Andrew Jackson	Democra	687,502	219
1832.	Henry Clay	Nat. Repub	530,189	49
1832.	John Floyd	Whig		11
1832.	William Wirt	Whig		7
1836.	Martin Van Buren	Democrat	761,549	170
1836.	W. H. Harrison	Whig	736,656	73
1836.	Hugh L White	Whig		26
1836.	Daniel Webster	Whig		14
1836.	W. P. Mangum	Whig		11
1840.	Martin Van Buren	Democrat	1,128,702	48
1840.	W. H. Harrison	Whig	1,275,017	234
1840.	J. G. Birney	Liberal	7,059	
1844.	James K. Polk	Democrat	1,337,243	170
1844.	Henry Clay	Whig	1,299,068	105
1844.	James G. Birney	Liberal	62,300	
1848.	Zachary Taylor	Whig	1,360,101	163
1848.	Lewis Cass	Democrat	1,220,544	127
1848.	Martin Van Buren	Free Soil	291,263	
1852.	Franklin Pierce	Democrat	1,601,474	254
1852.	Winfield Scott	Whig	1,386,578	42
1852.	John P. Hale	Free Soil	156,149	
1856.	James Buchanan	Democrat	1,838,169	174
1856.	John C. Fremont	Republican	1,341,262	114
1856.	Millard Filmore	American	874,534	8
1860.	Abraham Lincoln	Republican	1,866,852	180
1860.	Stephen A. Douglas	Democrat	1,375,157	72
1860.	J. C. Breckinridge	Democrat	845,763	39
1860.	John Bell	Union	589,581	12
1864.	Abraham Lincoln	Republican	2,216,067	212
1864.	Geo. B. McClellan	Democrat	1,808,725	21
1868.	U. S. Grant	Republican	3,015,071	214
1868.	Horatio Seymour	Democrat	2,709,613	80
1872.	U. S. Grant	Republican	3,597,070	286
1872.	Horace Greeley	Liberal	2,834,079	
1872.	Charles O'Conor	Democrat	29,408	
1876.	R. B. Hayes	Republican	4,033,950	185
1876.	Samuel J. Tilden	Democrat	4,284,885	184
1876.	G. C. Smith	Prohibition	9,522	
1880.	James A. Garfield	Republican	4,449,053	214
1880.	W. S. Hancock	Democrat	4,442,035	155
1880.	James B. Weaver	Greenback	307,306	
1884.	Grover Cleveland	Democrat	4,874,986	219
1884.	James G. Blaine	Republican	4,851,981	182
1884.	Benjamin F. Butler	People's	175 370	
1884.	John P. St. John	Prohibition	150,369	
1888.	Benjamin Harrison	Republican	5,439,853	233
1888.	Grover Cleveland	Democrat	5,540,329	168
1888.	Clinton B. Fisk	Prohibition	249,506	
1888.	A. J. Streeter	Union Labor	146,935	
1892.	Benjamin Harrison	Republican	5,162,874	145
1892.	Grover Cleveland	Democrat	5,556,562	277
1892.	James B. Weaver	Populist	1,055,424	22
1896.	William McKinley	Republican	7,101,401	271
1896.	William J. Bryan	Dem.–Pop	6,470,656	176
1896.	Joshua Levering	Prohibition	130,560	
1896.	John M. Palmer	N. Democrat	132,056	

Politics of the Presidents.

The subjoined table will be found interesting, as a reference, to many of our readers. Of course, the name of Washington heading the list does not mean that he was the candidate of any party or faction, but is placed there to complete the roll. The name of the President is given, the date of his inauguration and the party to which he belonged. In connection with this it is interesting to note the ballots cast at the national conventions and the popular vote for President by States.

NAME.	INAUGURATION.	POLITICS.
George Washington	April 30, 1789	Unanimous.
John Adams	March 4, 1797	Federal.
Thomas Jefferson	March 4, 1801	Democrat.
James Madison	March 4, 1809	Democrat.
James Monroe	March 4, 1817	Democrat.
John Quincy Adams	March 4, 1825	Federal.
Andrew Jackson	March 4, 1829	Democrat.
Martin Van Buren	March 4, 1837	Democrat.
Wm. Henry Harrison	March 4, 1841	Whig.
John Tyler	April 6, 1841	Whig.
James K. Polk	March 4, 1845	Democrat.
Zachary Taylor	March 5, 1849	Whig.
Millard Fillmore	July 9, 1850	Whig.
Franklin Pierce	March 4, 1853	Democrat.
James Buchanan	March 4, 1857	Democrat.
Abraham Lincoln	March 4, 1861	Republican.
Andrew Johnson	April 15, 1865	Republican.
Ulysses S. Grant	March 4, 1869	Republican.
Rutherford B. Hayes	March 5, 1877	Republican.
James A. Garfield	March 4, 1881	Republican.
Chester A. Arthur	Sept. 20, 1881	Republican.
Grover Cleveland	March 4, 1885	Democrat.
Benjamin Harrison	March 4, 1889	Republican.
Grover Cleveland	March 4, 1893	Democrat.
William McKinley	March 4, 1897	Republican.

Ballots Cast at the National Conventions in 1896.

The National Republican Convention for nominating candidates for the presidency and vice-presidency was held at St. Louis, June 16, 1896. The platform reaffirmed the doctrine of protection and declared for the gold standard. President McKinley was nominated on the first ballot. He received 661½ votes; Reed, 84½; Quay, 61½; Morton, 58; Allison, 35½. Garret A. Hobart was nominated for the vice-presidency.

The Democrats met in Chicago, July 7, 1896. W. J. Bryan, of Nebraska, was nominated for the presidency on the fifth ballot. He received 500 votes; Bland 106; Pattison, 95; Matthews, 31; Boies, 26. Arthur Sewall, of Maine, was nominated for the vice-presidency.

The Sound-Money Democratic National Convention was held at Indianapolis, September 2, 1896. Senator John M. Palmer, of Illinois, was nominated for the presidency, and Gen. Simon B. Buckner, of Kentucky, for the vice-presidency.

The result of the election is recorded below:

Popular Vote for President by States in 1896.

STATES.	McKinley.	Bryan.	Palmer.	Levering.
Alabama	54,737	131,219	6,464	2,147
Arkansas	37,512	110,103	893	889
California	146,588	144,166	.....	2,573
Colorado	26,271	161,269	.....	1,717
Connecticut	110,297	56,740	4,336	1,806
Delaware	20,452	16,615	956	602
Florida	11,389	32,213	1,778	868
Georgia	20,191	94,232	2,708	.....
Idaho	6,324	23,192	.....	181
Illinois	607,130	466,703	6,390	9,796
Indiana	323,719	305,771	2,146	3,056
Iowa	289,293	223,741	4,519	3,192
Kansas	158,541	171,810	1,209	2,351
Kentucky	218,171	217,890	5,114	4,781
Louisiana	22,012	77,096	1,810	.....
Maine	80,421	34,504	1,864	1,571
Maryland	136,978	104,745	2,507	5,928
Massachusetts	279,976	105,711	11,749	2,998
Michigan	293,327	237,251	6,930	4,968
Minnesota	193,501	139,626	3,202	4,343
Mississippi	4 730	63,457	1,021	390
Missouri	304,940	363,652	2,355	3,169
Montana	10,490	43,680	.....	.....
Nebraska	101,064	115,999	2,797	1,196
Nevada	1,939	8,377	.....	.....
New Hampshire	57,444	21,650	3,420	776
New Jersey	221,367	113,675	6,373	5,614
New York	819,838	551,513	18,972	16,075
North Carolina	155,222	174,488	578	635
North Dakota	26,336	20,689	.....	356
Ohio	527,945	478,547	1,831	5,060
Oregon	48,711	46,739	974	789
Pennsylvania	728,300	427,127	11,000	19,274
Rhode Island	37,437	14,495	1,166	1,160
South Carolina	9,313	58,801	824	.....
South Dakota	40,802	40,930	.....	992
Tennessee	148,773	168,176	1,951	3,098
Texas	164,886	368,299	5,030	185
Utah	13,861	67,053	.....	.....
Vermont	50,991	10,607	1,329	728
Virginia	135,388	154,985	2,127	2,341
Washington	39,153	51,646	1,668	968
West Virginia	104,414	92,927	677	1,203
Wisconsin	269,135	165,528	4,584	7,509
Wyoming	10,072	10,855	.....	159
Total	7,101,401	6,470,656	132,056	130,560

Annual Salaries of Principal United States Officers.

LEGISLATIVE.

President	$50,000
Vice-President	8,000
Secretary of State	8,000
Secretary of Treasury	8,000
Secretary of Interior	8,000
Secretary of Navy	8,000
Secretary of War	8,000
Secretary of Agriculture	8,000
Postmaster-General	8,000
Attorney General	8,000
Speaker of House of Representatives	8,000
United States Senators	5,000
Representatives in Congress	5,000

UNITED STATES MINISTERS TO

England	$17,500
Germany	17,500
France	17,500
Russia	17,500
China	12,000
Brazil	12,000
Spain	12,000
Japan	12,000
Mexico	12,000
Central America	10,000
Chili	10,000
Peru	10,000
Venezuela	7,500
Turkey	7,500
Sweden and Norway	7,500
Netherlands	7,500
Denmark	5,000
Greece	5,000
Uruguay	5,000
Portugal	5,000
Switzerland	5,000
Liberia	4,000

JUDGES.

Chief Justice U. S. Supreme Court	$10,500
Associate Judges	10,000
United States Circuit Judges	6,000
U. S. District Judges.....from $3,500 to	4,500
Judge of U. S. Court of Claims	4,500

HEADS OF DEPARTMENTS.

Director of Geological Surveys	$6,000
Auditor of Railroad Accounts	5,000
Superintendent of Census	6,000
Superintendent of Naval Observatory	5,000
Commissioner of Patents	5,000
Director of the Mint	4,500
Commissioner of General Land Office	4,000
Superintendent of Signal Service	5,500
Commissioner of Pensions	5,000
Superintendent of Nautical Almanac	$4,400
Commander of Marine Corps	4,500
Commissioner of Indian Affairs	4,000
Commissioner of Education	3,000

Salaries of the United States Army and Navy Officers.

ARMY.

General	$13,500
Lieutenant-General	11,000
Major-General	7,500
Brigadier-General	5,500
Colonel	3,500
Lieutenant-Colonel	3,000
Major	2,500
Captain	2,000
Regimental Adjutant	1,800
First Lieutenant	1,600
Second Lieutenant	1,400

NAVY.

Admiral	$13,000
Vice-Admiral	9,000
Rear-Admiral	6,000
Commodore	5,000
Captain	4,500
Commander	3,500
Lieutenant-Commander	2,800
Lieutenant	2,400
Master	1,800
Ensign	1,200
Midshipman	1,000

The President's Salary, etc.

Most people believe that the $50,000 a year which the President gets as his salary is the sum total. This is a mistake. $36,064 is given him, in addition to his salary of $50,000, to pay the salaries of his subordinates and clerks. His private secretary is paid $3,250, his assistant private secretary $2,250, his stenographer $1,800, five messengers, each $1,200, a steward $1,800, two door-keepers, each $1,200, four other clerks at good salaries, one telegraph operator, two ushers $1,200 and $1,400, a night usher $1,200, a watchman $900, and a man who takes care of the fires who receives $864 a year. In addition to this, there is given him $8,000 for incidental expenses such as stationery, carpets, and the care of the presidential stables. And under another heading there is given him nearly $40,000 more. Of this $12,500 is for repairs and refurnishing the White House, $2,500 is for fuel, $4,000 is for the green-house, $15,000 is for gas, matches and the stable. The White House, all told, costs the country in connection with the President considerably over $125,000 a year.

Cabinet Facts.

There were six Secretaries of State who afterward became Presidents, namely, Jefferson, Madison, Monroe, John Quincy Adams. Van Buren, and Buchanan.

Monroe was Secretary of War for a short time after he had served in the State Department, and General Grant was Secretary of War *ad interim*. There have been no Secretaries of the Treasury, the Navy, or the Interior, nor any Postmasters or Attorney Generals who have become President. Jeff Davis was Secretary of War under President Pierce.

Religion of the Presidents.

Washington, Garfield, and Harrison were the only Presidents who were church members, but all, one excepted, were men who revered Christianity. Adams married a minister's daughter, and was inclined to Unitarianism. Jefferson was not a believer, at least while he was Chief Magistrate. Madison's early connections were Presbyterian. Monroe is said to have favored the Episcopal Church. John Quincy Adams was like his father. Jackson was a Presbyterian and died in the communion of that church. Van Buren was brought up in the Reformed Dutch Church, but afterward inclined to the Episcopal Church. Harrison leaned toward the Methodist Church, and Tyler was an Episcopalian. Polk was baptized by a Methodist preacher after his term of office expired. Taylor was inclined to the Episcopal communion. Fillmore attended the Unitarian Church, and Franklin Pierce was a member, but not a communicant, of a Congregationalist Church, at Concord. Buchanan was a Presbyterian, as is also Benjamin Harrison. General Grant attended the Methodist Church, and President Garfield the Church of the Disciples.

Presidents of the United States Inaugurated on Other than the 4th of March.

George Washington, April 30, 1789; James Monroe, second term, March 5, 1821; John Tyler, April 6, 1841; Zachary Taylor, March 5, 1849; Millard Fillmore, July 10, 1850; Andrew Johnson, April 15, 1865; R. B. Hayes, March 5, 1877.

THE WHITE HOUSE.

The residence of the President of the United States is officially known as the Executive Mansion, which means that it is the residence of the head of the Executive branch of the Government; but it is seldom called in ordinary talk, either by those who live in it, or by the American people in general, anything but the White House. This is a very unpretentious title, and it is interesting to note how the residence of the President, in a country which is full of white houses, came to bear this simple name as its special property.

The explanation is easily found. The first Executive Mansion at Washington was occupied in 1800. It was built of freestone, and was unpainted; but in 1814 the British Army occupied Washington, and burned, with other public buildings, the President's house, leaving it a blackened ruin.

The house was rebuilt on the same site, and the same walls were used in its construction; but they were so discolored by smoke that, on the suggestion of General Jackson, they were painted white, not only to improve their appearance, but in token of the successful defiance of British fire by the American Republic.

The mansion soon became the "White House" in the mouths of the people on account of its dazzling color, and from that day to this it has been repainted white every ten years. Its name commemorates a patriotic feeling, therefore, as well as serves to describe the appearance of the mansion, for the original coat of white paint was a sort of protest against the vandalism of the British, and every subsequent coat has served to perpetuate the protest.

INTERESTING FACTS ABOUT WASHINGTON, D. C.

The dome of the United States Capitol is 287½ feet high. The weight of the iron alone in the dome of the Capitol is 8,909,200 pounds.

Of the domes to large buildings in the world the dome of the United States Capitol ranks fifth in height and fourth in diameter.

It is said that the Capitol of the United States is unquestionably the finest and largest building of the kind on the face of the earth.

The great bronze door of the east front entrance of the rotunda of the Capitol weighs 20,000 pounds and cost $28,000.

The six large paintings on the walls of the rotunda of the Capitol cost $74,000. Three of them cost $10,000 each, one $12,000, and the other four $8000 each.

There are 51½ acres of ground around the Capitol, which are known as the "Capitol Grounds," and cost the government $684,199.

The Soldiers' Home grounds, near Washington, embrace 800 acres of land.

The new State Department has 150 rooms and cost $5,000,000.

Washington's tomb, at Mount Vernon, Virginia, is seventeen miles south of the Capitol.

The Scott statue in Washington, which is made of bronze, weighs 12,000 pounds, and cost $20,000.

The District of Columbia comprises sixty-four square miles, and lies entirely within the State of Maryland.

Pennsylvania avenue, from the Treasury Building to the Capitol is 160 feet wide and almost as smooth as an ice-pond.

The statue of Gen. McPherson, located in McPherson Square in Washington city cost $23,500, and weighs 7000 pounds.

The new War Department has 173 rooms and cost $2,500,000. The building has 412 windows.

The water used in the White House for drinking purposes is conveyed to the Mansion by pipes from a spring in Franklin Park, several squares distant.

Originals of the New Testament.

The New Testament was originally written in Greek. It is not claimed that any of the manuscripts written by the Apostles themselves are in existence.

The Bible Printed in 300 Tongues.

The British and Foreign Bible Society reports that the sacred Scriptures were last year translated into six fresh languages. The number of tongues in which this society now publishes the Bible is thus increased to 300. Fifty years ago it was published in 150 tongues. The society distributed four million two hundred and six thousand volumes during the year.

Curiosities of the Bible.

The Bible contains 3,566,480 letters, 773,746 words, 31,173 verses, 1,189 chapters, and 66 books. The word "and" occurs 46,277 times. The word "Lord" occurs 1,855 times. The word "reverend" occurs but once, which is in the 9th verse of the 111th Psalm. The middle verse is the 8th verse of the 118th Psalm. The 21st verse of the 7th chapter of Ezra contains all the letters of the alphabet except the letter J. The 19th chapter of II Kings and the 37th chapter of Isaiah are alike. The longest verse is the 9th verse of the 8th chapter of Esther. The shortest verse is the 35th verse of the 11th chapter of St. John. There are no words or names of more than six syllables. In the original Hebrew manuscripts of the Old Testament a division of the matter into paragraphs was early introduced for convenience in reading. Larger divisions into sections suitable for Sabbath readings were made about the middle of the fifteenth century. The gospels were divided into sections for a similar purpose as early as the third century. The present arrangement of the Scriptures into chapters, however, originated in the thirteenth century with Cardinal Hugo, who devised it while making a Latin concordance. The division into verses was introduced by the celebrated printer, Robert Stephens, in his Greek Testament (1551), and in his Latin Bible (1556-7).

The word "heaven" occurs the following number of times in each of the books of the New Testament:

Book	Time	Book	Time
Matthew	70	Philippians	2
Mark	17	Colossians	5
Luke	30	I Thessalonians	2
John	18	II Thessalonians	1
Acts	24	Hebrews	5
Romans	2	James	2
I Corinthians	2	I Peter	3
II Corinthians	2	II Peter	1
Galatians	1	I John	1
Ephesians	3	Revelation	56

The word "heaven" occurs several times with the meaning of sky, and in a similar sense, but the above list gives the number of times "heaven" is used as meaning the abode of the blest or the immediate presence of the Lord.

Valuable Bibles.

A copy of the Mazarin Bible was recently sold at auction in London, and brought an even $10,000. This is the fourth of these volumes which has been sold inside of sixteen years, and the price it brought was also lower than those of the other three. One sold for $19,500, another for $13,450, and the other for $13,250. This edition of the Bible was the work of Gutenberg and Faust, and was the first book ever printed with movable types. As an artistic production, it is claimed to have never been surpassed.

The Roman Catholic Bible.

The translations of the Bible by the Protestants at the Reforation were soon followed by translations at the hands of Roman Catholic scholars, intended for those who still adhered to the Roman Church. Accordingly the New Testament appeared at Rheims, in France, in 1582; and the Old Testament appeared at Douai in 1609–10, although it had been prepared before the New Testament. The first complete edition of the entire Bible, according to this recension was published at Rouen in 1633–35. Says Dr. Schaff: "Its translators were good scholars, but were obliged to take the Latin Vulgate as the basis, and to adhere closely to it." A revision was made about the middle of the last century.

A Petrified Bible.

While cleaning an old swamp, Mr. Martin Flush, living near Pleasant Valley, Ind., discovered quite a curiosity. Several feet beneath the leaves and muck he unearthed what appeared to be a stone book. Close inspection showed it to be a family Bible, bearing the date 1773 plainly lettered. It is now solid limestone. Those who have examined the book state that it was originally a real book and is now petrified.

Discoveries and Settling of Countries.

America discovered by Columbus, October 11, 1492.

Andreanoffsy Isles, between Asia and America, discovered 1760.

Angola settled by Portugal, 1482.

Anguilla, in the Caribbees, first planted by England, 1650.

Antigua settled by the English, 1632.

Archangel, passage to, discovered, 1553.

Aruba Isle, planted by Holland, 1634.

Azores Isles discovered by Portugal, 1419.

Baffin's Bay discovered, 1622.

Bahama Isles, discovered, 1659; taken possession of by the English, December, 1718.

Barbadoes discovered and planted, 1614.

Barbuda Isle first planted by England, 1628.

Barrington Isle one of the Gallapagos, explored, June, 1793

Batavia, in the Island of Java, first fortified by Holland, 1618.

Bermuda Isles discovered, 1527 ; settled, 1612.

Boston, Mass., built, 1630.

Botany Bay settlement first sailed from England, March 21, 1787.

Bourbon (formerly Mascareen) Isle planted by France, 1672.

Brazil discovered, 1486; settled by the Spaniards, 1515; settled by Holland, 1624; taken from Holland by Portugal, 1654.

Britain discovered to be an island about 90.

Caledonia, in America, settled, 1699.

California discovered by Cortez, 1543.

Canada discovered by Cabot, 1499; explored by the French, 1508, 1524 and 1534; settled, 1540; Quebec built, 1603; taken first by England, 1628.

Canary Isles discovered, 1344, and granted Spain; explored, 1393.

Cape Blanco, on the coast of Africa, discovered, 1441.

Cape Breton discovered by the English, 1584; yielded to France, 1632; taken by England, 1745; restored, 1748; again taken and kept, 1758.

Cape de Verd Islands discovered, 1447.

Cape of Good Hope discovered, 1487; planted by Holland, 1651.

Cape Horn first sailed round, 1616.

Carolina discovered, 1497, planted, 1629.

Caribbee Isles discovered, 1595.

Cat Isle, one of the Bahamas, the first discovery in America by Columbus, 1492.

Cayenne Isle first planted by France, 1635.

Ceylon, the Isle of, discovered, 1506.

Chatham Isle, one of the Gallapagos, explored, June, 1793.

Chili discovered by Spain, 1518; invaded by the Spaniards, 1540.

China first visited by the Portuguese, 1517; conquered by the Eastern Tartars, 1635.

Christopher's, St., Isle of, discovered, 1595; settled by the English, 1626.

Congou Kingdom discovered, 1482; settled by Portugal, 1486.

Crimea settled by Russia, 1784.

Cuba discovered, 1492; settled in 1511.

Curacoa settled by the Dutch, 1634.

Darien settled, 1700.

Davis' Straits discovered, 1586.

De la Plate, river, discovered, 1512.

Deseada Isle was discovered by Columbus, 1494.

Domingo, St., Isle of, discovered, 1492; city founded, 1494.

Dominica discovered by Columbus, November 3, 1493.

Easter Isle discovered, 1722.

East Indies discovered by the Portuguese, 1497; visited overland by some English, 1591; first Dutch voyage, 1595; first voyage of the English company, 1601; first from France, 1601; first voyage of the Danes, 1612.

Faulkland, Isles of, discovered, 1592.

Florida discovered by Cabot, 1500; settled in 1763.

Frobisher's Straits discovered, 1578.

Fox Island, in North Pacific Ocean, discovered, 1760.

Galapagos Isles discovered, 1700; explored by Captain James Colnett, 1793.

Georgia colony erected by General Oglethorpe, 1739.

Goree Isle, on the Guinea Coast, first planted by the Dutch, 1617.

Granada Isle settled by France, 1652.

Greenland was discovered in 1585; settled, 1721, 1731.

Guadaloupe Isle discovered by Columbus, 1493; planted by France, 1635.

Guinea Coast discovered by the Portuguese, 1482; slave trade commenced here by Captain Hawkins an Englishman, 1563.

Helena, St., discovered, 1502; first possessed by England, 1600; settled by the English, 1651.

Hood's Isle, one of the Galapagos, in the Pacific Ocean, explored, June, 1793.

Hudson Bay discovered by Captain Hudson, 1607.

Iceland discovered by a Danish pirate in 860.

Jamaica discovered by Columbus, 1494; settled by the Spaniards, 1509.

Japan discovered, 1542; visited by the English, 1612.

Kamtschatka discovered by the Russians, 1739.

Ladrone Isles discovered, 1521.

Le Roach Island, near Faulkland's Island, discovered, 1657.

Louisiana, west of the Mississippi, discovered by the French, 1633; settled by them, 1718; ceded to the United States, 1801.

Madagascar discovered by the Portuguese, 1506.

Madeira, Island of, discovered, 1344 and 1418.

Magellan, Straits of, discovered, 1520.

Marigalante Isle discovered, 1493.

Maryland planted by Lord Baltimore, at the expense of £40,000, 1633.

Mauritius Isle discovered, 1598; settled in 1721.

Mexico conquered by the Spaniards under Cortez, 1519-21.

Montreal discovered, 1534; settled, 1629.

Montserrat, in the West Indies, discovered by Columbus, 1493; planted by England, 1632.

Nevis planted by England, 1628.

New Caledonia discovered, 1774.

New England planted by the Puritans, 1620.

Newfoundland discovered by Cabot, 1497; settled, 1614.

New Guinea discovered, 1699.

New Holland discovered by the Dutch, 1627; settled by the English, 1787.

New Jersey planted by the Swedes, 1637.

New Spain or Mexico, discovered, 1518.

New Zealand discovered, 1660; explored in 1769.

New Plymouth built and settled, 1620.

New York settled, 1664.

North-East passage to Russia discovered, 1553.

Nova Scotia settled, 1622.

Nova Zembla discovered, 1553.

Otaheite, or George III's Island, discovered June 18, 1765.

Owhy-he Island discovered, 1778; where Captain Cook was killed.

Palmyra, ruins of in the Deserts of Syria, discovered, 1678.

Panama settled, 1516.

Paraguay discovered, 1525.

Pennsylvania, Penn's charter for planting, 1680.

Peru discovered, 1518.

Philippine Isles discovered by the Spaniards, 1521.

Pitt's Straits in the West Indies, discovered, April 30, 1760.

Porto Rico discovered, 1497.

Saba planted by the Dutch, 1640.

Salem, Mass., settled, 1628.

Sandwich Islands, in the Pacific Ocean, discovered, 1778.

Savannah settled, 1732.

Sierra Leone Coast discovered, 1460.

Society Isles, in the Pacific Ocean, discovered, 1765.

Solomon Isles, in America, discovered, 1527.

Somer's Isles discovered, 1527.

St. Eustatia Isle settled by Holland, 1632.

St. Lawrence River discovered and explored by the French, 1508.

St. Salvador, Guanihani, or Cat Island, was the first land discovered in the West Indies, or America, by Columbus, October 11, 1492.

Suffolk Isles discovered, 1764; first produced sugar, 1770.

Surinam planted by England, 1640.

Surat settled, 1603.

Tate Islands, East Indies, discovered, June 29, 1795.

Tobago planted by the Dutch, 1642.

Terceras Isles discovered by the Spaniards, 1583.

Terra Firma settled by the Spaniards, 1524.

Trinidad, The Isle of, discovered, 1498.

Ukraine settled by Russia, 1752.

Virginia discovered by Sir Walter Raleigh, 1584; the settlement of the first permanent colony there, 1607.

West Indies discovered by Columbus, 1492.

The Political Divisions of the World, Arranged According to Size.

	Sq miles.		Sq. miles.
Russian Empire	7,862,568	Nebraska	75,995
Chinese Empire	4,695,334	Washington	69,994
British Empire	4,419,559	Indian Territory	68,991
United States	3,578,392	Uruguay	66,716
British N. Am.	3,523,083	Missouri	65,350
Brazil	3,231,047	Florida	59,268
Australian Cont.	2,945,219	Georgia	58,000
Turkish Empire	1,917,472	Michigan	56,451
India	1,552,028	Illinois	55,410
China (proper)	1,300,000	Iowa	55,045
Argentine Repub.	826,828	Wisconsin	53,924
Mexico	773,144	Arkansas	52,198
Egypt	659,081	Alabama	50,722
Turkestan	640,516	North Carolina	50,704
Persia	562,344	Orange Free State	48,019
Bolivia	535,769	Mississippi	47,156
Peru	510,107	New York	47,000
Venezuela	368,235	Pennsylvania	46,000
U. S. of Colombia	357,179	Tunis	45,710
Tripoli	344,423	Tennessee	45,600
Morocco	259,593	Louisiana	41,346
Afghanistan	258,530	Ohio	39,964
Texas	247,356	Virginia	38,352
Austria,	240,381	Portugal	37,977
Madagascar	232,315	Kentucky	37,680
Ecuador	218,984	Maine	35,000
France	209,428	South Carolina	34,000
Spain	195,607	Indiana	33,809
California	188,981	Bavaria	29,373
Central America	178,869	West Virginia	23,000
Sweden	170,634	Servia	21,210
Beloochistan	165,830	Greece	19,353
German Empire	160,207	St. Domingo	17,826
Abyssinia	158,392	Switzerland	15,722
Dakota	152,000	Denmark	14,734
Japan	149,399	Netherlands	12,680
Montana	143,776	Belgium	11,373
Prussia	135,806	Maryland	11,124
Chili	132,624	Vermont	10,212
Paraguay	126,352	Hayti	10,205
New Mexico	121,201	Liberia	9,567
Great Britain	121,115	New Hampshire	9,280
Norway	120,295	Fejee Islands	8,033
Arizona	113,916	Massachusetts	7,800
Nevada	112,090	Sandwich Islands	7,633
Italy	109,837	New Jersey	7,570
Colorado	104,500	Wurtemburg	7,532
Oregon	95,274	Baden	5,912
Idaho	90,932	Saxony	5,779
Utah	88,056	Mecklenburg-Schwerin	5,190
Wyoming	88,000	Connecticut	4,674
Minnesota	83,531	Papal States	4,552
Kansas	81,318	Hesse Darmstadt	2,969
Transvaal Republic	77,964	Oldenburg	2,465

Wealth of Principal Nations.

Argen. Rep.	$1,660,000,000	Greece	$1,055,000,000
Australia	4,950,000,000	Holland	4,935,000,000
Austria	18,060,000,000	Italy	12,755,000,000
Belgium	4,030,000,000	Mexico	3,190,000,000
Canada	3,250,000,000	Norway	1,410,000,000
Denmark	1,830,000,000	Portugal	1,855,000,000
France	40,300,000,000	Spain	7,965,000,000
Germany	31,615,000,000	Sweden	3,475,000,000
Great Britain and Ireland	43,600,000,000	Switzerland	1,620,000,000
		U. States	47,475,000,000

Money.

Money first mentioned as a medium of commerce in the twenty-third chapter of Genesis, when Abraham purchased a field as a sepulcher for Sarah, in the year of the world 2139; first made at Argos, 894 before Christ. Silver has increased 30 times its value since the Norman conquest, viz: a pound in that age was three times the quantity what it is at present, and ten times its value in purchasing any commodity; first coined in the United States, 1652; first paper money, 1690.

Weight of a Million Dollars.

The United States gold dollar contains 25.8 troy grains. A troy pound contains 5760 troy grains, but the ordinary pound of currency, avoirdupois, weighs 7000 troy grains. Therefore $1,000,000 in United States gold coin weigh 3686.4 pounds avoirdupois. A United States standard silver dollar weighs 412.5 troy grains. $1,000,000 in United States silver coin of the present standard weigh 56,931 pounds avoirdupois, or nearly 28¼ tons.

Foundations of Fortunes.

Senator Farwell began life as a surveyor.

Cornelius Vanderbilt began life as a farmer.

Wanamaker's first salary was $1.25 a week.

A. T. Stewart made his start as a school-teacher.

Jim Keene drove a milk-wagon in a California town.

Cyrus Field began life as a clerk in a New England store.

Pulitzer once acted as stoker on a Mississippi steamboat.

"Lucky" Baldwin worked on his father's farm in Indiana.

Dave Sinton sold sugar over an Ohio counter for $1 a week.

Moses Taylor clerked in Water street, New York, at $2 a week.

George W. Childs was an errand boy for a bookseller at $4 a month.

J. C. Flood, the California millionaire, kept a saloon in San Francisco.

P. T. Barnum earned a salary as bartender in Niblo's Theatre New York.

Jay Gould canvassed Delaware County, New York, selling maps at $1.50 apiece.

C. P. Huntington sold butter and eggs for what he could get a pound and dozen.

Andrew Carnegie did his first work in a Pittsburgh telegraph office at $3 a week.

Whitelaw Reid did work as correspondent of a Cincinnati newspaper for $5 a week.

Adam Forepaugh was a butcher in Philadelphia when he decided to go into the show business.

Senator Brown made his first money by plowing his neighbor's fields with a pair of bull calves.

A Business Lesson.

Peter Cooper was one of the most successful, careful and prudent business men of his time. He was strongly opposed to the methods of many merchants who launched out into extravagant enterprises on borrowed money, for which they paid exorbitant rate of interest. The following anecdote illustrates this point very forcibly:

Once, while talking about a project with an acquaintance, the latter said he would have to borrow the money for six months, paying interest at the rate of 3 per cent. per month.

"Why do you borrow for so short a time?" Mr. Cooper asked.

"Because the brokers will not negotiate bills for longer."

"Well, if you wish," said Mr. Cooper, "I will discount your note at that rate for three years."

"Are you in earnest?" asked the would-be borrower.

"Certainly, I am. I will discount your note for $10,000 for three years at that rate. Will you do it?"

"Of course I will," said the merchant.

"Very well," said Mr. Cooper; "just sign this note for $10,000 payable in three years, and give your check for $800, and the transaction will be complete."

"But where is the money for me?" asked the astonished merchant.

"You don't get any money," was the reply. "Your interest for thirty-six months at three per centum per month amounts to 108 per centum, or $10,800; therefore your check for $800 just makes us even."

The force of this practical illustration of the folly of paying such an exorbitant price for the use of money was such that the merchant determined never to borrow at such ruinous rates, and he frequently used to say that nothing could have so fully convinced him as this rather humorous proposal by Mr. Cooper.

Avoid Debt.

Every man who would get on in the world should, as far as possible, avoid debt. From the very outset of his career he should resolve to live within his income, however paltry it may be. The art of living easily as to money is very simple—pitch your scale of living one degree below your means. All the world's wisdom on the subject is most tersely epitomized in the words of Dickens's Micawber: "Annual income, twenty pounds; annual expenditure, nineteen six; result, happiness. Annual income, twenty pounds; annual expenditure, twenty pounds naught and six; result, misery." Many a man dates his downfall from the day when he began borrowing money. Avoid the first obligation, for, that incurred, others follow, one necessitating the other; every day the victim will get more entangled; then follow pretexts, excuses, lies, till all sense of shame is lost, the whole life becomes a makeshift, and the debtor

in despair finally resolves to live by indirect robbery and falsehood.

Getting Rich by Small Inventions.

The New Jersey man who hit upon the idea of attaching a rubber erasing tip to the end of the lead pencil is worth $200,000.

The miner who invented a metal rivet or eyelet at each end of the mouth of coat and trowsers pockets, to resist the strain caused by the carriage of pieces of ore and heavy tools, has made more money from his letters patent than he would have made had he struck a good vein of gold-bearing quartz.

Every one has seen the metal plates that are used to protect the heels and soles of rough shoes, but every one doesn't know that within ten years the man who hit upon the idea has made $250,000.

As large a sum as was ever obtained for any invention was enjoyed by the Yankee who invented the inverted glass bell to hang over gas-jets to protect ceilings from being blackened by smoke.

The inventor of the roller skate has made $1,000,000, notwithstanding the fact that his patent had nearly expired before the value of it was ascertained in the craze for roller skating that spread over the country a few years ago.

The gimlet-pointed screw has produced more wealth than most silver mines, and the Connecticut man who first thought of putting copper tips on the toes of children's shoes is as well off as if he had inherited $1,000,000, for that's the amount his idea has realized for him.

The common needle threader which every one has seen for sale, and which every woman owns, was a boon to needle users. The man who invented it has an income of $10,000 a year from his invention.

A minister in England made $50,000 by inventing an odd toy that danced by winding it with a string.

The man who invented the return ball, an ordinary wooden ball with a rubber string attached to pull it back, made $1,000,000 from it.

Results of Saving Small Amounts of Money.

The following shows how easy it is to accumulate a fortune, provided proper steps are taken. The table shows what would be the result at the end of fifty years by saving a certain amount each day and putting it at interest at the rate of six per cent.:

Daily Savings.	The result.	Daily Savings.	The result.
One cent	$ 950	Sixty cents	$57,024
Ten cents	9,504	Seventy cents	66,528
Twenty cents	19,006	Eighty cents	76,032
Thirty cents	28,512	Ninety cents	85,537
Forty cents	38,015	One dollar	95,041
Fifty cents	47,520	Five dollars	475,208

Nearly every person wastes enough in twenty or thirty years, which, if saved and carefully invested, would make a family quite independent; but the principle of small savings has been lost sight of in the general desire to become wealthy.

What a Dollar Saved Each Day Will Earn.

One dollar per day saved in the cost of fuel amounts, with interest, on basis of 312 working days in a year, to following:

	Four Per Cent.	Six Per Cent.	Eight Per Cent.	Ten Per Cent.
One Year	$324 48	$330 72	$336 96	$343 20
Five Years	1,757 50	1,864 20	1,976 80	2,095 26
Ten Years	3,895 76	4,359 14	4,881 40	5,469 73
Fifteen Years	6,479 24	7,697 82	9,149 18	10,904 30
Twenty Years	9,662 39	12,165 72	15,419 94	19,656 78

Value of Metals.

Fully ninety-nine persons in every hundred, if asked to name the most precious metals, would mention gold as first, platinum as second, silver as third. If asked to name others a few might add nickel, and a very few aluminum to the list.

Let us see how near the truth they would be. Gold is worth about $240 per pound, troy; platinum $130, and silver about $12. Nickel would be quoted at about 60 cents and pure aluminum $8 to $9 to the troy pound.

We will now compare these prices with those of the rarer and less well known of the metals. To take them in alphabetical order, barium sells for $975 a pound, when it is sold at all, and calcium is worth $1,800 a pound, while cerium is a shade higher—its cost is $160 an ounce, or $1,920 a pound. Chromium brings $200; cobalt falls to about half the price of silver, while didymium is the same price as cerium, and cerium $10 cheaper on the ounce than calcium, or just $1,680 per pound.

If the wealth of the Vanderbilts be not overestimated, it amounts to nearly $200,000,000. With this sum they could purchase 312 tons of gold and have something left over, but they couldn't buy two tons of gallium, that rare metal being worth $4,250 an ounce. With this metal the highest price is reached, and it may well be called the rarest and most precious of metals.

Glucinum is worth $250 per ounce; indium, $158; irinium, $658 per pound; lanthanium, $175, and linthium, $160 per ounce. Niobium costs $128 per ounce; asmium, paladium, platinum, potassium and rhodium bring respectively, $640, $400, $39, $32 and $512 per pound. Strontium costs $128 an ounce; tantium, $144; tellurium, $9; athorium, $272; vanadium, $320; vitrium, $144, and ziconium, $250 an ounce.

Barium is more than four times as valuable as gold, and gallium more than 162 times as costly, while many of the metals are twice and thrice as valuable.

Aluminum, which now costs $8 to $9 a pound, will eventually be produced as cheap as steel. When this can be done it will push the latter metal out of a great

Lightning conductors afford protection over a circle whose radius equals their height from the ground; formerly considered twice.

Average Annual Rainfall in the United States.

PLACE	Inches.	PLACE.	Inches.
Neah Bay, Wash. Ter.	123	Hanover, N. H.	40
Sitka, Alaska	83	Ft. Vancouver	38
Ft. Haskins, Oregon	66	Cleveland, Ohio	37
Mt. Vernon, Alabama	66	Pittsburgh, Pa.	37
Baton Rouge, La.	60	Washington, D. C.	37
Meadow Valley, Cal.	57	White Sulph'r Spgs., Va.	37
Ft. Tonson, Indian Ter.	57	Ft. Gibson, Indian Ter.	36
Ft. Myers, Florida	56	Key West, Florida	36
Washington, Arkansas.	54	Peoria, Illinois	35
Huntsville, Alabama	54	Burlington, Vermont	34
Natchez, Mississippi	53	Buffalo, New York	33
New Orleans, La.	51	Ft. Brown, Texas	33
Savannah, Georgia	48	Ft. Leavenworth, Kan.	31
Springdale, Kentucky	48	Detroit, Michigan	30
Fortress Monroe, Va.	47	Milwaukee, Wisconsin	30
Memphis, Tennessee	45	Penn Yan, New York	28
Newark, New Jersey	44	Ft. Kearney	25
Boston, Massachusetts	44	Ft. Snelling, Minnesota	25
Brunswick, Maine	44	Salt Lake City, Utah Ter.	23
Cincinnati, Ohio	44	Mackinac, Michigan	23
New Haven, Conn	44	San Francisco, Cal.	21
Philadelphia, Pa	44	Dallas, Oregon	21
Charleston, S. Carolina	43	Sacramento, California	21
New York City, N. Y.	43	Ft. Massachusetts, Col.	17
Gaston, N. Carolina	43	Ft. Marcy, New Mex. T.	16
Richmond, Indiana	43	Ft. Randall, Dakota T.	16
Marietta, Ohio	43	Ft. Defiance, Arizona	14
St. Louis, Missouri	43	Ft. Craig, New Mex. T.	11
Muscatine, Iowa	42	San Diego, California	9
Baltimore, Maryland	41	Ft. Colville, Wash. Ter.	9
New Bedford, Mass	41	Ft. Bliss, Texas	9
Providence, R. I.	41	Ft. Bridger, Utah Ter.	6
Ft. Smith, Arkansas	40	Ft. Garland, Colorado	6

Average Annual Temperature in United States.

Place of Observation.	Average Temperature.	Place of Observation.	Average Temperature.
Tucson, Arizona	69	Salt Lake City, Utah	52
Jacksonville, Florida	69	Romney, West Virginia	52
New Orleans, La.	69	Indianapolis, Indiana	51
Austin, Texas	67	Leavenworth, Kansas,	51
Mobile, Alabama	66	Sante Fe, New Mex. Ter.	51
Jackson, Mississippi	64	Steilacoom, W. Ter.	51
Little Rock, Arkansas	63	Hartford, Connecticut	50
Columbia, S. Carolina	62	Springfield, Illinois	50
Ft. Gibson, Indian Ter.	60	Camp Scott, Nevada	50
Raleigh, North Carolina	59	Des Moines, Iowa	49
Atlanta, Georgia	58	Omaha, Nebraska	49
Nashville, Tennessee	58	Denver, Colorado	48
Richmond, Virginia	57	Boston, Massachusetts	48
Louisville, Kentucky	56	Albany, New York	48
San Francisco, Cal.	55	Providence, R. I.	48
Washington, D. C.	55	Detroit, Michigan	47
St. Louis, Missouri	55	Ft. Randall, Dakota Ter.	47
Baltimore, Maryland	54	Sitka, Alaska	46
Harrisburg, Pa.	54	Concord, N. H.	46
Wilmington, Delaware	53	Augusta, Maine	45
Trenton, New Jersey	53	Madison, Wisconsin	45
Columbus, Ohio	53	Helena, Montana Ter.	43
Portland, Oregon	53	Montpelier, Vermont	43
Ft. Boise, Idaho	52	St. Paul, Minnesota	42

The Derivations of the Names of the Months.

JANUARY.—The Roman Janus presided over the beginning of everything; hence the first month of the year was called after him.

FEBRUARY.—The Roman festival Februs was held on the 15th day of this month, in honor of Lupercus, the god of fertility.

MARCH.—Named from the Roman god of war, Mars.

APRIL.—Latin, Aprilis, probably derived from aperire, to open; because spring generally begins and the buds open in this month.

MAY.—Latin, Maius, probably derived from Maia, a femine divinity worshiped at Rome on the first day of this month.

JUNE.—Juno, a Roman divinity worshiped as the Queen of Heaven.

JULY (Julius).—Julius Cæsar was born in this month.

AUGUST.—Named by the Emperor Augustus Cæsar, B. C. 30, after himself, as he regarded it a fortunate month, being that in which he had gained several victories.

SEPTEMBER.—Latin, septem or 7. September was the seventh month in the old Roman calendar.

OCTOBER.—Latin, octo. Eighth month of the old Roman year.

NOVEMBER.—Latin, novem, or 9. November was the ninth month in the old Roman year.

DECEMBER.—Latin, decem, or 10. December was the tenth month of the early Roman year. About the 21st of this month the sun enters the Tropic of Capricorn, and forms the winter solstice.

Days of the Week.

SUNDAY.—Saxon, Sunnandæg, day of the sun.

MONDAY.—German, Montag, day of the moon.

TUESDAY.—Ang-Saxon, Tiwesdæg, from Tw, the god of war.

WEDNESDAY.—Ang-Saxon, Wodnesdæg, from Odin, the god of storms.

THURSDAY.—Danish, Thor, the god of thunder.

FRIDAY.—Saxon, Frigedæg, day of Freya, goddess of marriage.

SATURDAY.—Day of Saturn, the god of time.

The names of the seven days of the week originated with the Egyptian astronomers. They gave them the names of the sun, moon and five planets: viz., Mars, Mercury, Jupiter, Venus and Saturn.

The Chinese and Thibetans have a week of five days named after iron, wood, water, feathers and earth.

Principal Exports of Various Countries.

ARABIA.—Coffee, aloes, myrrh, frankincense, gum arabic.

BELGIUM.—Grain, flax, hops, woolens, linens, laces, various manufactures.

BRAZIL.—Cotton, sugar, coffee, tobacco, gold, diamonds, wheat and dry goods.

CANADA, NOVA SCOTIA AND NEW BRUNSWICK.—Flour, furs, lumber, fish.

CAPE COLONY.—Brandy, wine, ostrich feathers, hides, tallow.

CENTRAL AMERICA.—Logwood, mahogany, indigo, cocoa.

CHILI.—Silver, gold, copper, wheat, hemp, hides, sugar, cotton, fruits.

CHINA.—Tea, silks, nankeens, porcelain, opium, articles of ivory and pearl.

DENMARK.—Grain, horses, cattle, beef, pork, butter, cheese.

EASTERN, WESTERN AND SOUTHERN AFRICA.—Gold, ivory, ostrich feathers.

EGYPT.—Rice, grain, linseed, fruits, indigo, cotton, sugar.

ECUADOR AND NEW GRENADA.—Coffee, cotton, indigo, cocoa, fruits, sugar.

FRANCE—Silks, woolens, linens, cotton, wine, brandy, porcelain, toys.

GERMANY.—Linen, grain, various manufactures of silver, copper, etc.

GREAT BRITAIN.—Woolens, cottons, linens, hardware, porcelain, etc.

GREENLAND.—Whale oil, whale bone, seal skins.

HINDOOSTAN.—Cotton, silks, rice, sugar, coffee, opium, indigo.

HOLLAND.—Fine linens, woolens, butter, cheese, various manufactures.

ITALY.—Silks, wine, oil, grain, fruits.

IRELAND.—Linens, beef, butter, tallow, hides, potatoes, barley.

JAPAN.—Silk and cotton goods, japanware, porcelain.

MEXICO.—Gold, silver, logwood, cochineal, fruits.

PERSIA.—Carpets, shawls, wine, silk, cotton, rice, rhubarb, guns, swords, etc.

PERU.—Silver, gold, Peruvian bark, mercury, sugar, cotton, fruits.

RUSSIA.—Hemp, iron, linen, grain, timber, furs, tallow, platina.

SPAIN AND PORTUGAL.—Silks, wool, wine, oil, fruits, salt.

SWEDEN AND NORWAY.—Iron, steel, copper, timber, fish.

SWITZERLAND.—Watches, jewelry, paper, laces, linen, cotton and silk goods, etc.

TURKEY.—Grain, fruits, cotton, oil, wines, carpets, muslin, swords.

UNITED STATES.—

Eastern States.—Lumber, beef, pork, fish, cottons, woolens, etc.

Middle States.—Flour, wheat, salt, coal, cottons, woolens.

Southern States.—Cotton, rice, tobacco, corn, lumber, pitch, fruits.

Western States.—Corn, wheat, lead, coal, iron, salt, lime, beef, pork.

VENEZUELA.—Sugar, coffee, cocoa, cotton, indigo, fruits.

WEST INDIES.—Sugar, rum, molasses, coffee, spice, cotton, indigo, fruits.

Salaries Paid to Heads of Governments.

Various governments pay their chiefs as follows: The United States, $50,000 a year; Persia, $30,000,000; Russia, $10,000,000; Siam, $10,000,000; Spain, $3,900,000; Italy, $3,000,000; Great Britain, $3,000,000; Morocco, $2,500,000; Japan, $2,300,000; Egypt, $1,575,000; Germany, $1,000,000; Saxony, $700,000; Portugal, Sweden and Brazil, each $600,000; France, $200,000; Hayti, $240,000; Switzerland, $3,000.

Sovereigns of England.

"First William the Norman;
Then William, his son,
Henry, Stephen and Henry,
Then Richard and John;
Next, Henry the third,
Edwards, one, two, three,
And again, after Richard,
Three Henrys we see.
Two Edwards, third Richard,
If rightly I guess;
Two Henrys, sixth Edward,
Queen Mary, Queen Bess,
Then Jamie, the Scotchman,
Then Charles, whom they slew,
Yet received after Cromwell
Another Charles, too;
Next James the second
Ascended the throne;
Then good William and Mary
Together came on;
'Till Annie, Georges four
And fourth William all past;
God sent us Victoria,
May she long be the last!"

The Smallest Republic in Europe.

The honor which was claimed for Gersau belongs to the independent hamlet of Foust. This pretty group of huts, situated a few hours distant from Oleron, in the department of the lower Pyrenees, belongs neither to France nor Spain. It has somewhat over 100 citizens. They have no mayor or other civil official. They have not even an established church or priest of their own, but attend at a neighboring village. The very weakness of this little republic preserves it in existence.

What Royalty Costs England.

As a sample of what royalty costs the people of Great Britain alone, Whitaker gives the following annuities to the royal family:

Her Majesty—

Privy purse	£60,000
Salaries of household	131,260
Expenses of household	172,500
Royal bounty, etc	13,500
Unappropriated	8,540
	£385,800
Prince of Wales	40,000
Princess of Wales	10,000
Prince Albert Victor	10,000
Crown Princess of Prussia	8,000
Duke of Edinburgh	25,000
Princess Christian of Schleswig-Holstein	6,000
Princess Louise (Marchioness of Lorne)	6,000
Duke of Connaught	25,000
Duke of Albany	25,000
Duke of Cambridge	6,000
Duchess of Mecklenburg-Strelitz	3,000
Duke of Cambridge	12,000
Duchess of Teck	5,000
Total	£566,800 or $2,834,000

Carlisle Tables of Mortality.

Showing how many persons out of 10,000 will die annually, on the average until all are deceased. Used by Life Insurance Companies.

Year.	No. Alive.	Deaths.	Year.	No. Alive.	Deaths.
At Birth.	10,000	1,539	41	5,009	69
1	8,461	682	42	4,940	71
2	7,779	505	43	4,869	71
3	7,274	276	44	4,798	71
4	6,998	201	45	4,727	70
5	6,797	121	46	4,657	69
6	6,670	82	47	4,588	67
7	6,594	58	48	4,521	63
8	6,536	48	49	4,458	61
9	6,493	33	50	4,397	59
10	6,460	29	51	4,338	62
11	6,431	31	52	4,276	65
12	6,400	32	53	4,211	68
13	6,368	33	54	4,143	70
14	6,335	35	55	4,073	73
15	6,300	39	56	4,000	76
16	6,261	42	57	3,924	82
17	6,219	43	58	3,842	93
18	6,176	43	59	3,749	106
19	6,133	43	60	3,633	122
20	6,090	43	61	3,521	126
21	6,047	42	62	3,395	127
22	6,005	42	63	3,268	125
23	5,963	42	64	3,143	125
24	5,921	42	65	3,018	124
25	5,879	43	66	2,894	123
26	5,836	43	67	2,771	123
27	5,793	45	68	2,648	123
28	5,748	50	69	2,525	124
29	5,698	56	70	2,401	124
30	5,642	57	71	2,277	134
31	5,585	57	72	2,143	146
32	5,528	56	73	1,997	156
33	5,472	55	74	1,841	166
34	5,417	55	75	1,675	160
35	5,362	55	76	1,515	156
36	5,307	56	77	1,359	146
37	5,251	57	78	1,213	132
38	5,194	58	79	1,081	128
39	5,136	61	80	953	116
40	5,075	66	81	837	112

How Human Life is Spent.

According to a French statistician, taking the mean of many accounts, a man of 50 years of age has slept 6,000 days, worked 6,500 days, walked 800 days, amused himself 4,000 days, was eating 1,500 days, was sick 500 days, etc. He ate 17,000 pounds of bread, 16,000 pounds of meat, 4,600 pounds of vegetables, eggs and fish, and drank 7,000 gallons of liquid, namely, water tea, coffee, beer, wine, etc., altogether.

How to tell the Age of any Person.

There is a good deal of amusement in the following magical table of figures. It will enable you to tell how old the young ladies are. Just hand this table to a young lady, and request her to tell you in which column or columns her age is contained, and add together the figures at the top of the columns in which her age is found, and you have the great secret. Thus, suppose her age to be 17, you will find that number in the first and fifth columns; add the first figures of these two columns.

Here is the magic table:

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

Another Method of Telling Any One's Age.

Girls of a marriageable age do not like to tell how old they are, but you can find out by following subjoined instructions, the young lady doing the figuring. Tell her to put down the number of the month in which she was born; then to multiply it by two; then to add five; then to multiply it by 50; then to add her age; then to subtract 365; then to add 115; then tell her to

tell you the amount she has left. The two figures to the right will denote her age, and the remainder the month of her birth. For example, the amount is 822, she is twenty-two years old, and was born in the eighth month (August). Try it.

A Lady's Chance of Marrying

Every woman has some chance to marry; it may be one to fifty, or it may be ten to one that she will. Representing her entire chance at one hundred at certain points of her progress in time, it is found to be in the following ratio:

Between the ages of 15 and 20 years.....14½ per cent.
Between the ages of 20 and 25 years..... 52 per cent.
Between the ages of 25 and 30 years..... 18 per cent.
Between the ages of 30 and 35 years.....15½ per cent.
Between the ages of 35 and 40 years..... 3¾ per cent.
Between the ages of 40 and 45 years..... 2½ per cent.
Between the ages of 45 and 50 years...⅜ of 1 per cent.
Between the ages of 50 and 56 years...¼ of 1 per cent.

After sixty it is one-tenth of one per cent. or one chance in a thousand. A pretty slender figure—but FIGURES are often SLENDER at that age.

Mode of Execution in Every Country.

Country.	Mode.	Publicity.
Austria	Gallows	Public.
Bavaria	Guillotine	Private.
Belgium	Guillotine	Public.
Brunswick	Ax	Private.
China	Sword or cord	Public.
Denmark	Guillotine	Public.
Ecuador	Musket	Public.
France	Guillotine	Public.
Great Britain	Gallows	Private.
Hanover	Guillotine	Private.
Italy	Sword or gallows*	Public.
Netherlands	Gallows	Public.
Oldenberg	Musket	Public.
Portugal	Gallows	Public.
Prussia	Sword	Private.
Russia	Musket, gallows, or sword	Public.
Saxony	Guillotine	Private.
Spain	Garrote	Public.
Switzerland—		
Fifteen cantons	Sword	Public.
Two cantons	Guillotine	Public.
Two cantons	Guillotine	Private.
United States (other than New York)	Gallows	Mostly Private.
New York	Electricity	Private.

*Capital punishment abolished in 1876.

Antidotes for Poisons.

In cases where the other articles to be used as antidotes are not in the house, give two tablespoonfuls of mustard mixed in a pint of warm water. Also give large draughts of warm milk or water mixed with oil, butter or lard. If possible give as follows.

FOR BED-BUG POISON, BLUE VITRIOL, CORROSIVE SUBLIMATE, LEAD WATER, SALTPETRE, SUGAR OF LEAD, SULPHATE OF ZINC, RED PRECIPITATE, VERMILION, } Give Milk or White of Eggs, in large quantities.

FOR FOWLER'S SOLUTION, WHITE PRECIPITATE, ARSENIC, } Give prompt Emetic of Mustard and Salt—tablespoonful of each; follow with Sweet Oil, Butter or Milk.

FOR ANTIMONIAL WINE, TARTAR EMETIC, } Drink warm water to encourage vomiting. If vomiting does not stop, give a Grain of Opium in water.

FOR OIL VITRIOL, AQUA FORTIS, BI-CARBONATE POTASSA, MURIATIC ACID, OXALIC ACID } Magnesia or Soap, dissolved in water, every two minutes.

FOR CAUSTIC SODA, CAUSTIC POTASH, VOLATILE ALKALI, } Drink freely of water with Vinegar or Lemon Juice in it.

FOR CARBOLIC ACID } Give Flour and Water or Glutinous drinks.

FOR CHLORAL HYDRATE, CHLOROFORM, } Pour cold water over the head and face, with artificial respiration, Galvanic Battery.

FOR CARBONATE OF SODA, COPPERAS, COBALT, } Prompt Emetic; Soap or Mucilaginous drinks.

FOR LAUDANUM, MORPHINE, OPIUM, } Strong Coffee, followed by Ground Mustard, or Grease in warm water to produce vomiting. Keep in motion.

FOR NITRITE OF SILVER—Give common Salt in water.

FOR STRYCHNINE, TINCT. NUX VOMICA } Emetic of Mustard or Sulphate of Zinc, aided by warm water.

Powers of Locomotion of Animals, and Average Velocities of Various Bodies.

	Per hour		Per Sec.
A man walks	3 miles,	or	4 feet.
A horse trots	7 "	or	10 "
A horse runs	20 "	or	29 "
Steamboat runs	18 "	or	26 "
Sailing vessel runs	10 "	or	14 "
Slow rivers flow	3 "	or	4 "
Rapid rivers flow	7 "	or	10 "
A moderate wind blows	7 "	or	10 "
A storm moves	36 "	or	52 "
A hurricane moves	80 "	or	117 "
A rifle ball moves	1,000 "	or	1,466 "
Sound moves	743 "	or	1,142 "
Light moves	192,000 miles per second.		
Electricity moves	288,000 miles per second.		

The Pulse.

The natural rate of the pulse varies at different ages as follows:

	Beats per Minute.
At birth	130—140
One year	115—130
Two years	100—115
Three years	95—105
Four to seven years	85— 95
Seven to fourteen years	80— 90
Fourteen to twenty-one years	75— 85
Twenty-one to sixty years	70— 75
Old age	75— 85

Periods of Digestion.

SUBSTANCE.	H.	M.
Rice, boiled	1	
Eggs, whipped, raw	1	30
Trout, fresh, fried	1	30
Soup, barley, boiled	1	30
Apples, sweet, mellow, raw	1	30
Venison steak, broiled	1	45
Sago, boiled	1	45
Tapioca, boiled	2	
Barley, boiled	2	
Milk, boiled	2	
Liver, beef, fresh, broiled	2	
Eggs, fresh, raw	2	
Apples, sour, mellow, raw	2	
Cabbage, with vinegar, raw	2	
Milk, raw	2	15
Eggs, fresh, roasted	2	15
Turkey, domestic, roasted	2	30
Goose, wild, roasted	2	30
Cake, sponge, baked	2	30
Hash, warmed	2	30
Beans, pod, boiled	2	30
Parsnips, boiled	2	30
Potatoes, Irish, baked	2	30
Cabbage, head, raw	2	30
Custard, baked	2	45
Apples, sour, hard, raw	2	50
Oysters, fresh, raw	2	55
Eggs, fresh, soft boiled	3	
Beefsteak, broiled	3	
Mutton, fresh, broiled	3	
Mutton, fresh, boiled	3	
Soup, bean, boiled	3	
Chicken soup, boiled	3	
Dumpling, apple, boiled	3	
Oysters, fresh, roasted	3	15
Pork, salted, broiled	3	15
Porksteak, broiled	3	15
Mutton, fresh, roasted	3	15
Bread, corn, baked	3	15
Carrot, orange, boiled	3	15
Sausage, fresh, broiled	3	20
Oysters, fresh, stewed	3	30
Butter, melted	3	30
Cheese, old, raw	3	30
Oyster soup, boiled	3	30
Bread, wheat, fresh, baked	3	30
Turnips, flat, boiled	3	30
Potatoes, Irish, boiled	3	30
Eggs, fresh, hard boiled	3	30
Eggs, fresh, fried	3	30
Green corn and beans, boiled	3	45
Beets, boiled	3	45
Salmon, salted, boiled	4	
Beef, fried	4	
Veal, fresh, broiled	4	
Fowls, domestic, boiled	4	
Beef, old, salted, boiled	4	15
Pork, salted, fried	4	15
Pork, salted, boiled	4	30
Veal, fresh, fried	4	30
Cabbage, boiled	4	30
Pork, roasted	5	15
Suet, beef, boiled	5	30

Percentage of Nutrition in Various Articles of Food.

Raw Cucumbers	2	Roast Poultry	26
Raw Melons	3	Raw Beef	26
Boiled Turnips	4½	Raw Grapes	27
Milk	7	Raw Plums	29
Cabbage	7½	Broiled Mutton	30
Apples	10	Oatmeal Porridge	75
Currants	10	Rye Bread	79
Whipped Eggs	13	Boiled Beans	87
Beets	14	Boiled Rice	88
Apples	16	Barley Bread	88
Peaches	20	Wheat Bread	90
Boiled Codfish	21	Baked Corn Bread	91
Broiled Venison	22	Boiled Barley	92
Potatoes	22½	Butter	92
Fried Veal	24	Boiled Peas	93
Roast Pork	24	Raw Oils	95

Percentage of Alcohol in Various Liquors.

Scotch Whisky	54.53	Currant Wine	20.50
Irish Whisky	53.9	Port	22.90
Rum	53.68	Madeira	22.27
Gin	51.6	Teneriffe	19.79
Brandy	53.39	Sherry	19.17
Burgundy	14.57	Claret	15.1
Cape Muscat	18.25	Elder	8.79
Champagne (still)	13.80	Ale	6.87
Champagne (sp'rkl'g)	12.61	Porter	4.02
Cider	5.2 to 9.8	Malaga	17.26
Constantia	19.75	Rhenish	12.8
Gooseberry Wine	11.48	Small Beer	1.28

Weight of Eggs.

The following table of the weight of eggs per pound of various breeds of fowls and the number of eggs laid in a year is approximately fair, though it may vary under exceptionally adverse or favorable conditions:

Varieties.	Eggs Per lb.	No. Eggs Per Year.
Light Brahmas	7	130
Dark Brahmas	8	130
Partridge Cochins	7	130
Black, White, Buff Cochins	7	120
Plymouth Rocks	8	150
Houdans	8	155
La Fleche	7	135
Creve Cœurs	8	145
Black Spanish	8	155
Leghorns	8	160
Hamburgs	9	150
Dominiques	8	135
Games	9	140
Bantams	16	90

Food in an Egg.

An egg contains as much nourishment as a pound and an ounce of cherries, a pound and a quarter of grapes, a pound and a half of russet apples, two pounds of gooseberries and four pounds of pears; and 114 pounds of grapes, 127 pounds of russet apples, 192 pounds of pears, and 327 pounds of plums are equal in nourishment to 100 pounds of potatoes.

Rules for the Management of Poultry.

1. Good dry houses, well ventilated but void of drafts.

2. Keep your hen houses clean and the floor covered with ashes.

3. Whitewash inside monthly from March 1st to October 1st.

4. Feed regularly, but never overfeed; cease feeding when the fowls cease to run for it.

5. Scatter the food on the ground when the weather will permit.

6. Feed mixed grain, or alternate, as corn one day, oats next, wheat next, etc.

7. Allow adult fowls freedom as early in the morning as they desire.

8. Keep hens with chicks in small coops (well covered and dry) until the chicks are three weeks old.

9. Feed chicks morning, noon and afternoon.

10. Mix ground black pepper with the morning food.

11. Grease the hens well under the wings, breast and fluff feathers as soon as the chicks are taken off, with ointment made of lard and carbolic acid; one tablespoonful of lard to ten drops of acid.

Box Measures.

Farmers and market gardeners will find a series of box measures very useful, and they can readily be made by anyone who understands the two-foot rule and can handle the saw and hammer. The following measurements, it will be seen, vary slightly from the United States bushel adopted by some of the States, but are sufficiently accurate for all ordinary purposes:

A box 16 by 16⅓ inches square and 8 inches deep will contain a bushel, or 2150.4 cubic inches, each inch in depth holding one gallon.

A box 24 by 11.2 inches square and 8 inches deep will also contain a bushel, or 2150.4 cubic inches, each in depth holding 1 gallon. A box 12 by 11.2 inches square and 8 inches deep will contain half a bushel, or 1075.2 cubic inches, each inch in depth holding half a gallon.

A box 8 by 8.4 inches square and 8 inches deep will contain half a peck, or 298.8 cubic inches. The gallon, dry measure.

A box 4 by 4 inches square and 4.2 inches deep will contain 1 quart, or 67.2 cubic inches.

How to Drive Flies from Stables.

Scatter chloride of lime on a board in a stable, to remove all kinds of flies, but more especially biting flies. Sprinkling beds of vegetables with even a weak solution, effectually preserves them from caterpillars, slugs, etc. A paste of one part powdered chloride of lime, and a half part of some fatty matter placed in a narrow band round the trunk of the tree, prevents insects from creeping up it. Even rats, mice, cockroaches and crickets flee from it.

How to Keep Flies from Horses.

Procure a bunch of smartweed and bruise it to cause the juice to exude. Rub the animal thoroughly with the bunch of bruised weed, especially on the legs, neck and ears. Neither flies or other insects will trouble him for twenty-four hours. The process should be repeated every day. A very convenient way of using it is, to make a strong infusion by boiling the weed a few minutes in water. When cold it can be conveniently applied with a sponge or brush. Smartweed is found growing in every section of the country, usually on wet ground near highways.

A Rule for Determining the Weight of Live Cattle by Measurement.

There are many rules for estimating the weight of cattle by measurement, but one of the authorities on the subject says that "There is no rule that comes nearer than good guessing," and that no two animals will weigh alike according to measurement. The same authority further remarks that a rule, as good as any, is to find the superficial feet by multiplying the girth, just behind the shoulder-blade, by the length from the fore part of the shoulder-blade to the root of the tail. Thus an ox girthing seven feet nine inches, and measuring six feet in length, would contain seven and three-fourths times six or 46½ superficial feet. For cattle, grass fed, the following is given as the weight per superficial foot: Girth less than 3 feet, 11 pounds; girth 3 to 5 feet, 16 pounds; girth 5 to 7 feet, 23 pounds; girth 7 to 9 feet, 31 pounds.

Population of the United States

During the Nineteenth Century

States and Territories.	1810	1820	1830	1840	1850	1860	1870	1880	1890
Alabama	.....	127,901	309,527	590,756	771,623	964,201	996,992	1,262,505	1,513,017
Arizona	.....	.....	.....	.....	.....	.....	9,658	40,440	59,620
Arkansas	.. ..	14,255	30,388	97,574	209,897	435,450	484,471	802,525	1,128,179
California	.....	.....	.....	.....	92,597	379,994	560,247	864,694	1,208,130
Colorado	.....	.....	.....	.....	.....	34,277	39,864	194,327	419,198
Connecticut	261,942	275,148	297,675	309,978	370,792	460,147	537,454	622,700	746,258
Dakota	.....	.....	.....	.....	....	4,837	14,181	135,177	.....
Delaware	72,674	72,749	76,748	78,085	91,532	112,216	125,015	146,608	168,493
District of Columbia	24,523	32,039	39,834	43,712	51,687	75,080	131,700	177,624	230,392
Florida	....	.....	34,730	54,477	87,445	140,424	187,748	269,493	391,422
Georgia	252,433	340,985	516,823	691,392	906,185	1,057,286	1,184,109	1,542,180	1,837,353
Idaho	.....	.....	.....	.....	.....	.....	14,999	32,610	84,385
Illinois	12,282	55,162	157,445	476,183	851,470	1,711,951	2,539,891	3,077,871	3,826,351
Indiana	24,520	147,178	343,031	685,866	988,416	1,350,428	1,680,637	1,978,301	2,192,404
Iowa	.....	.....	.....	43,112	192,214	674,913	1,194,020	1,624,615	1,911,896
Kansas	.....	.....	.....	.....	.....	107,206	364,399	996,096	1,427,096
Kentucky	406,511	564,135	687,917	779,828	982,405	1,155,684	1,321,011	1,648,690	1,858,635
Louisiana	76,556	152,923	215,739	352,411	517,762	708,002	726,915	939,946	1,118,587
Maine	228,705	298,169	399,455	501,793	583,169	628,279	626,915	648,936	661,086
Maryland	380,546	407,350	447,040	470,019	583,034	687,049	780,894	934,943	1,042,390
Massachusetts	472,040	523,159	610,408	737,699	994,514	1,231,066	1,457,351	1,783,085	2,238,943
Michigan	4,762	8,765	31,639	212,267	397,654	749,113	1,184,059	1,636,937	2,093,889
Minnesota	....	.....	.....	.....	7,077	172,023	439,706	780,773	1,301,826
Mississippi	40,352	75,448	136,621	375,651	606,526	791,305	827,922	1,131,597	1,289,600
Missouri	20,845	66,557	140,455	383,702	682,044	1,182,012	1,721,295	2,168,380	2,679,184
Montana	.....	.....	.....	.....	.....	.....	20,595	39,159	132,159
Nebraska	.....	.....	.....	.....	.....	28,841	122,993	452,402	1,058,910
Nevada	.....	.....	.....	.....	.....	6,857	42,491	62,266	45,761
New Hampshire	214,460	244,022	269,328	284,574	317,976	326,073	318,300	346,991	376,530
New Jersey	245,562	277,426	320,823	373,306	489,555	672,035	906,096	1,131,116	1,444,933
New Mexico	.....	.....	.....	.....	61,547	93,516	91,874	119,565	153,593
New York	959,049	1,372,111	1,918,608	2,428,921	3,097,394	3,880,735	4,382,759	5,082,871	5,997,853
North Carolina	555,500	638,829	707,987	753,419	869,039	992,622	1,071,361	1,399,750	1,617,947
North Dakota	... .	.....	.....	.....	.....	.....	.....	.....	182,719
Ohio	230,760	581,295	937,903	1,519,467	1,980,329	2,339,511	2,665,260	3,198,062	3,672,316
Oklahoma	.....	.....	.....	.....	.....	.....	.....	.....	61,834
Oregon	.....	.....	.....	.....	13,294	52,465	90,923	174,768	313,767
Pennsylvania	810,091	1,047,507	1,348,233	1,724,033	2,311,786	2,906,215	3,521,951	4,282,819	5,258,014
Rhode Island	76,931	83,015	97,199	108,830	147,545	174,620	217,353	276,531	345,506
South Carolina	415,115	502,741	581,185	594,398	668,507	703,708	705,606	995,577	1,151,149
South Dakota	.....	.....	.....	....	.....	.....	.....	.....	328,808
Tennessee	261,727	422,771	681,904	829,210	1,002,717	1,109,801	1,258,520	1,542,359	1,767,518
Texas	.....	.....	.....	..... .	212,592	604,215	818,579	1,591,749	2,235,523
Utah	.....	.....	.....	.....	11,380	40,273	86,786	143,963	207,905
Vermont	217,895	235,966	280,652	291,948	314,120	315,098	330,551	332,286	332,422
Virginia	974,600	1,065,116	1,211,405	1,239,797	1,421,661	1,596,318	1,225,163	1,512,565	1,655,980
Washington	.....	.....	.....	.....	.....	11,594	23,955	75,116	349,390
West Virginia	.....	....	.....	.....	.....	....	442,014	618,457	762,704
Wisconsin	.....	.....	.....	30,945	305,391	775,881	1,054,670	1,315,497	1,686,880
Wyoming	.....	.....	.....	.....	.....	....	9,118	20,789	60,705
Total	7,239,881	9,633,822	12,866,020	17,069,453	23,191,876	31,443,221	38,558,371	50,155,783	62,622,250

Language and Sentiment of Flowers

THE flower world is linked with all the finer sympathies of our nature. The sweet blossoms that cover the green wood are the delight of our childhood; a bouquet is the best ornament of girlish beauty: the meetest offering from young and timid love. Flowers deck the chamber of old age, and are the last sad gift of sorrow to the dead.

It was from the East that we obtained a language of perfume and beauty which bestows a meaning on buds and blossoms, though the Turkish and Arabic flower-language does not much resemble ours. It is formed, not by an idea or sentiment originating in the flower itself, but by its capacity for rhyming with another word; that is, the word with which the flower rhymes becomes its signification.

La Mottraie, the companion of Charles XII., brought the Eastern language of flowers to Europe; but it was the gifted Lady Mary Wortley Montague who first told the English-speaking world how the fair maidens of the East had lent a mute speech to flowers, and could send a letter by a bouquet. Here is part of a Turkish love-letter sent by her in a purse to a friend. She says, speaking of it: "There is no color, no flower, no weed, no fruit, herb, pebble, or feather, that has not a verse belonging to it; and you may quarrel, reproach, or send letters of passion, friendship, or civility, or even of news, without even inking your fingers."

In the letter the following flowers are employed:

JONQUIL.—Have pity on my passion.

ROSE.—May you be pleased, and all your sorrows be mine.

A STRAW.—Suffer me to be your slave.

The European flower-language was utilized, and almost formed, by Aimé Martin; and the earlier works on the subject were only translations or adaptations from the French: but English writers have a good deal altered and modified it since; and as new flowers come yearly to us from other lands, every fresh vocabulary many contain additional words or sentences, even as our own tongue grows by grafts from other languages.

The vocabulary which is given below is believed to be complete in every respect.

The Flower-Language.

A very interesting correspondence may be maintained by means of bouquets. We give below several examples of this. The message is given and then the names of the flowers needed in the bouquet.

1.

May maternal love protect your early youth in innocence and joy!

Flowers needed.

Moss.....*Maternal love.*
Bearded Crepis.....*Protect.*
Primroses.....*Early Youth.*
Daisy.....*Innocence.*
Wood Sorrel.....*Joy.*

2.

Your humility and amiability have won my love.

Flowers needed.

Broom.....*Humility.*
White Jasmine.....*Amiability.*
Myrtle.....*Love*

3.

Let the bonds of marriage unite us.

Flowers needed.

Blue Convolvulus.....*Bonds.*
Ivy.....*Marriage.*
A few whole straws.....*Unite us.*

4.

A Farewell.

Farewell! give me good wishes. Forget me not.

Flowers needed.

Sprig of Spruce Fir.....*Farewell.*
Sweet Basil.....*Give me your good wishes.*
Forget-Me-Not.....*Forget me not.*

5.

Your patriotism, courage, and fidelity merit everlasting remembrance.

Flowers needed.

Nasturtium.....*Patriotism.*
Oak leaves.....*Courage.*
Heliotrope.....*Fidelity.*
Everlasting, or Immortelles.....*Everlasting remembrance.*

6.

A Red Rose.....*I love you.*

7.

An Impertinence.

Your insincerity and avarice make me hate you.

Flowers needed.

Cherry Blossom, or Foxglove...*Insincerity.*
Scarlet Auricula.....*Avarice.*
Turk's Cap.....*Hatred.*

8.

A Warning.

Beware of deceit. Danger is near. Depart.

Flowers needed.

Oleander.....*Beware.*
White Flytrap.....*Deceit.*
Rhododendron.....*Danger is near.*
Sweet Pea.....*Depart.*

9.

A Rebuke.

Your frivolity and malevolence will cause you to be forsaken by all.

Flowers needed,

London Pride.....*Frivolity.*
Lobelia.....*Malevolence.*
Laburnum.....*Forsaken.*

10.

Be assured of my sympathy. May you find consolation!

Flowers needed.

Thrift.....*Be assured of my sympathy.*
Red Poppy.....*Consolation.*

11.

By foresight you will surmount your difficulties.

Flowers needed.

Holly.....*Foresight.*
Mistletoe.....*You will surmount your difficulties.*

Modifications of the Flower Language.

If a flower be given *reversed*, its original signification is understood to be contradicted, and the opposite meaning to be implied.

A rosebud divested of its thorns, but retaining its leaves, convey the sentiment, "I fear no longer; I hope;" thorns signify fears, and leaves hopes.

Stripped of leaves and thorns, the bud signifies, "There is nothing to hope or fear."

The expression of flowers is also varied by changing their positions. Place a marigold on the head, and it signifies "Mental anguish;" on the bosom, "Indifference."

When a flower is given, the pronoun *I* is understood by bending it to the right hand; *thou*, by inclining it to the left.

"Yes," is implied by touching the flower given with the lips.

"No," by pinching off a petal and casting it away.

"I am," is expressed by a laurel-leaf twisted round the bouquet.

"I have," by an ivy-leaf folded together.

"I offer you," by a leaf of the Virginian creeper.

THE VOCABULARY.

Abecedary.....*Volubility.*
Abatina.....*Fickleness.*
Acacia.....*Friendship.*
Acacia, Rose or White.....*Elegance.*
Acacia, Yellow.....*Secret love.*
Acanthus.....*The fine arts. Artifice.*
Acalia.....*Temperance.*
Achillea Millefolia.....*War.*
Achimenes Cupreata.....*Such worth is rare.*
Aconite (Wolfsbane).....*Misanthropy.*
Aconite, Crowfoot.....*Lustre.*
Adonis, Flos.....*Sad memories.*
African Marigold.....*Vulgar minds.*
Agnus Castus.....*Coldness. Indifference.*
Agrimony.....*Thankfulness. Gratitude.*
Almond (Common).....*Stupidity. Indiscretion.*
Almond (Flowering).....*Hope.*
Almond, Laurel.....*Perfidy.*
Allspice.....*Compassion.*

Aloe.....*Grief. Religious superstition.*
Aithæa Frutex (Syrian Mallow)*Persuasion.*
Alyssum (Sweet).....*Worth beyond beauty.*
Amaranth (Globe).....*Immortality. Unfading love.*
Amaranth (Cockscomb).....*Foppery. Affectation.*
Amaryllis.....*Pride. Timidity. Splendid beauty.*
Ambrosia.....*Love returned.*
American Cowslip.....*Divine beauty.*
American Elm.....*Patriotism.*
American Linden.....*Matrimony.*
American Starwort.....*Welcome to a stranger. Cheerfulness in old age.*
Amethyst.....*Admiration.*
Andromeda.....*Self-sacrifice.*
Anemone (Zephyr Flower).....*Sickness. Expectation.*
Anemone (Garden).....*Forsaken.*
Angelica.....*Inspiration, or magic.*
Angrec.....*Royalty.*
Apricot (Blossom).....*Doubt.*
Apple.....*Temptation.*
Apple (Blossom).....*Preference. Fame speaks him great and good.*
Appie, Thorn.....*Deceitful charms.*
Apocynum (Dogsbane).....*Deceit.*
Arbor Vitæ.....*Unchanging friendship. Live for me.*
Arum (Wake Robin).....*Ardor. Zeal.*
Ash-leaved Trumpet Flower....*Separation.*
Ash Mountain.....*Prudence, or With me you are safe.*
Ash Tree.....*Grandeur.*
Aspen Tree.....*Lamentation, or fear.*
Aster (China).....*Variety. Afterthought.*
Asphodel.....*My regrets follow you to the grave.*
Auricula.....*Painting.*
Auricula, Scarlet.....*Avarice.*
Austurtium.....*Splendor.*
Azalea.....*Temperance.*

Bachelor's Buttons.....*Celibacy.*
Balm.....*Sympathy.*
Balm, Gentle.....*Pleasantry.*
Balm of Gilead.....*Cure. Relief.*
Balsam, Red.....*Touch me not. Impatient resolves.*
Balsam, Yellow.....*Impatience.*
Barberry.....*Sharpness of temper.*
Basil.....*Hatred.*
Bay Leaf.....*I change but in death.*
Bay (Rose) Rhododendron.....*Danger. Beware.*
Bay Tree.....*Glory.*
Bay Wreath.....*Reward of merit.*
Bearded Crepis.....*Protection.*
Beech Tree.....*Prosperity.*
Bee Orchis.....*Industry.*
Bee Ophrys.....*Error.*
Begonia.....*Deformity.*
Belladonna.....*Silence. Hush!*
Bell Flower, Pyramidal.....*Constancy.*
Bell Flower (small white).....*Gratitude.*
Belvedere.....*I declare against you.*
Betony.....*Surprise.*
Bilberry.....*Treachery.*
Bindweed, Great.....*Insinuation. Importunity.*
Bindweed, Small.....*Humility.*
Birch.....*Meekness.*
Birdsfoot, Trefoil.....*Revenge.*
Bittersweet; Nightshade.....*Truth.*
Black Poplar.....*Courage.*
Blackthorn.....*Difficulty.*
Bladder Nut Tree.....*Frivolity. Amusement.*
Bluebottle (Centaury).....*Delicacy.*
Bluebell.....*Constancy. Sorrowful regret.*
Blue-flowered Greek Valerian..*Rupture.*
Bonus Henricus.....*Goodness.*
Borage.....*Bluntness.*
Box Tree.....*Stoicism.*
Bramble.....*Lowliness. Envy. Remorse.*
Branch of Currants.....*You please all.*
Branch of Thorns.....*Severity. Rigor.*
Bridal Rose.....*Happy love.*
Broom.....*Humility. Neatness.*
Browallia Jamisonii.....*Could you bear poverty?*
Buckbean.....*Calm repose.*
Bud of White Rose.....*Heart ignorance of love.*
Buglos,.....*Falsehood.*
Bulrush.....*Indiscretion. Docility.*
Bundle of Reeds, with their Panicles.....*Music.*
Burdock.....*Importunity. Touch me not.*
Bur.....*Rudeness. You weary me.*
Buttercup (Kinkcup).....*Ingratitude. Childishness.*
Butterfly Orchis.....*Gayety.*
Butterfly Weed.....*Let me go.*

Cabbage.....*Profit.*
Cacalia.....*Adulation.*
Cactus.....*Warmth.*
Calla Æthiopica.....*Magnificent beauty.*

Calceolaria.....*I offer you pecuniary assistance, or I offer you my fortune.*
Calycanthus.....*Benevolence.*
Camelia Japonica, Red.....*Unpretending excellence.*
Camelia Japonica, White.....*Perfected Loveliness.*
Camomile.....*Energy in adversity.*
Campanula Pyramida.....*Aspiring.*
Canary Grass.....*Perseverance.*
Candytuft.....*Indifference.*
Canterbury Bell.....*Acknowledgment.*
Cape Jasmine.....*I am too happy.*
Cardamine.....*Paternal error.*
Carnation, Deep Red.....*Alas! for my poor heart.*
Carnation, Striped.....*Refusal.*
Carnation, Yellow.....*Disdain.*
Cardinal Flower.....*Distinction.*
Catchfly.....*Snare.*
Catchfly, Red.....*Youthful Love.*
Catchfly, White.....*Betrayed.*
Cattleya.....*Mature charms.*
Cattleya Pineli.....*Matronly grace.*
Cedar.....*Strength.*
Cedar of Lebanon.....*Incorruptible.*
Cedar Leaf.....*I live for thee.*
Celandine (Lesser).....*Joys to come.*
Cereus (Creeping).....*Modest genius.*
Centaury.....*Delicacy.*
Champignon.....*Suspicion.*
Chequered Fritillary.....*Persecution.*
Cherry Tree, White.....*Good education.*
Cherry Tree, White.....*Deception.*
Chestnut Tree.....*Do me justice.*
Chinese Primrose.....*Lasting love.*
Chickweed.....*Rendezvous.*
Chicory.....*Frugality.*
China Aster.....*Variety.*
China Aster, Double.....*I partake your sentiments.*
China Aster, Single.....*I will think of it.*
China or Indian Pink.....*Aversion.*
China Rose.....*Beauty always new.*
Chinese Chrysanthemum.....*Cheerfulness under adversity.*
Chorozema Varium.....*You have many lovers.*
Christmas Rose.....*Relieve my anxiety.*
Chrysanthemum, Red.....*I love.*
Chrysanthemum, White.....*Truth.*
Chrysanthemum, Yellow.....*Slighted love.*
Cineraria.....*Always delightful.*
Cinquefoil.....*Maternal affection.*
Circæa.....*Spell.*
Cistus, or Rock Rose.....*Popular favor.*
Cistus, Gum.....*I shall die to-morrow.*
Citron.....*Ill-natured beauty.*
Clarkia.....*The variety of your conversation delights me.*
Clematis.....*Mental beauty.*
Clematis, Evergreen.....*Poverty.*
Clianthus.....*Worldliness, Self-seeking.*
Clotbur.....*Rudeness. Pertinacity.*
Cloves.....*Dignity.*
Clover, Four-leaved.....*Be mine.*
Clover, Red.....*Industry.*
Clover, White.....*Think of me.*
Cobæa.....*Gossip.*
Cockscomb, Amaranth.....*Foppery. Affectation. Singularity.*
Colchicum, or Meadow Saffron.*My best days are past.*
Coltsfoot.....*Justice shall be done.*
Columbine.....*Folly.*
Columbine, Purple.....*Resolved to win.*
Columbine, Red.....*Anxious and trembling.*
Convolvulus.....*Bonds.*
Convolvulus, Blue (Minor).....*Repose. Night.*
Convolvulus, Major.....*Extinguished hopes.*
Convolvulus, Pink.....*Worth sustained by judicious and tender affection.*
Corchorus.....*Impatient of absence.*
Coreopsis.....*Always cheerful.*
Coreopsis Arkansa.....*Love at first sight.*
Coriander.....*Hidden worth.*
Corn.....*Riches.*
Corn, Broken.....*Quarrel.*
Corn Straw.....*Agreement.*
Corn Bottle.....*Delicacy.*
Corn Cockle.....*Gentility,*
Cornel Tree.....*Duration.*
Coronella.....*Success crown your wishes.*
Cosmelia Subra.....*The charm of a blush.*
Cowslip.....*Pensiveness. Winning grace.*
Cowslip, American.....*Divine beauty.*
Crab (Blossom).....*Ill-nature.*
Cranberry.....*Cure for heartache.*
Creeping Cereus.....*Horror.*
Cress.....*Stability. Power.*
Crocus.....*Abuse not.*
Crocus, Spring.....*Youthful gladness.*
Crocus, Saffron.....*Mirth.*
Crown, Imperial.....*Majesty. Power.*
Crowsbill.....*Envy.*
Crowfoot.....*Ingratitude.*

Crowfoot (Aconite-leaved) .....*Lustre.*
Cuckoo Plant .....*Ardor.*
Cudweed, American.....*Unceasing remembrance.*
Currant.....*Thy frown will kill me.*
Cuscuta.....*Meanness.*
Cyclamen.....*Diffidence.*
Cypress.....*Death. Mourning.*
Daffodil.....*Regard.*
Dahlia.....*Instability.*
Daisy.....*Innocence.*
Daisy, Garden.....*I share your sentiments.*
Daisy, Michaelmas.....*Farewell, or afterthought.*
Daisy, Party-colored.....*Beauty.*
Daisy, Wild.....*I will think of it.*
Damask Rose .....*Brilliant complexion.*
Dandelion.....*Rustic oracle.*
Daphne.....*Glory. Immortality.*
Daphne Odora.....*Painting the lily.*
Darnel.....*Vice.*
Dead Leaves.....*Sadness.*
Deadly Night-shade.....*Falsehood.*
Dew Plant.....*A serenade.*
Dianthus.....*Make haste.*
Diosma.....*Your simple elegance charms me.*
Dipteracanthus Spectabilis.....*Fortitude.*
Diplademia Crassinoda.....*You are too bold.*
Dittany of Crete.....*Birth.*
Dittany of Crete, White .....*Passion.*
Dock .....*Patience.*
Dodder of Thyme.....*Baseness.*
Dogsbane .....*Deceit. Falsehood.*
Dogwood .....*Durability.*
Dragon Plant,.....*Snare.*
Dragonwort.....*Horror.*
Dried Flax.....*Utility.*
Ebony Tree.....*Blackness.*
Echites Atropurpurea.....*Be warned in time.*
Eglantine (Sweetbriar).....*Poetry. I wound heal.*
Elder.....*Zealousness.*
Elm.....*Dignity.*
Enchanters' Night-shade.....*Witchcraft. Sorcery.*
Endive.....*Frugality.*
Escholzia .....*Do not refuse me.*
Eupatorium.....*Delay.*
Everflowing Candytuft.....*Indifference.*
Evergreen Clematis.....*Poverty.*
Evergreen Thorn.....*Solace in adversity.*
Everlasting.....*Never-ceasing remembrance.*
Everlasting Pea.....*Lasting pleasure.*
Fennel.....*Worthy all praise. Strength.*
Fern.....*Fascination. Magic. Sincerity.*
Ficoides, Ice Plant .....*Your looks freeze me.*
Fig.....*Argument.*
Fig Marigold.....*Idleness.*
Fig Tree.....*Prolific.*
Filbert .....*Reconciliation.*
Fir .....*Time.*
Fir Tree .....*Elevation.*
Flax .....*Domestic industry.*
Flax-leaved Goldenlocks.....*Tardiness.*
Fleur-de-lis.....*Flame. I burn.*
Fleur-de-Luce.....*Fire.*
Flowering Fern .....*Reverie.*
Flowering Reed.....*Confidence in Heaven.*
Flower-of-an-Hour .....*Delicate beauty.*
Fly Orchis.....*Error.*
Flytrap .....*Deceit,*
Fool's Parsley.....*Silliness.*
Forget-Me-Not .....*True love.*
Foxglove .....*Insincerity.*
Foxtail Grass .....*Sporting.*
Franciscea Latifolia.....*Beware of false friends.*
French Honeysuckle.....*Rustic beauty.*
French Marigold.....*Jealousy.*
French Willow.....*Bravery and humanity.*
Frog Ophrys.....*Disgust.*
Fuller's Teasel.....*Misanthropy.*
Fumitory.....*Spleen.*
Fuchsia, Scarlet.....*Taste.*
Furze, or Gorse.....*Love for all seasons.*

Garden Anemone.....*Forsaken.*
Garden Chervil.....*Sincerity.*
Garden Daisy.....*I partake your sentiments.*
Garden Marigold.....*Uneasiness.*
Garden Ranunculus.....*You are rich in attractions.*
Garden Sage.....*Esteem.*
Garland of Roses.....*Reward of virtue.*
Gardenia.....*Refinement.*
Germander Speedwell.....*Facility.*
Geranium, Dark.....*Melancholy.*
Geranium, Horse-shoe-leaf.....*Stupidity.*
Geranium Ivy.....*Bridal favor.*
Geranium, Lemon.....*Unexpected meeting.*
Geranium, Nutmeg.....*Expected meeting.*
Geranium, Oak-leaved.....*True Friendship*
Geranium, Pencilled.....*Ingenuity.*
Geranium, Rose-scented.....*Preference.*
Geranium, Searlet.....*Comforting.*
Geranium, Silver-leaved.....*Recall.*
Geranium, Wild.....*Steadfast Piety.*
Gillyflower .....*Bonds of affection.*
Gladioli.....*Ready armed.*

Glory Flower.....*Glorious beauty.*
Goat's Rue.....*Reason.*
Golden Rod.....*Precaution.*
Gooseberry.....*Anticipation.*
Gourd.....*Extent. Bulk.*
Grammanthus Chloraflora.....*Your temper is too hasty.*
Grape, Wild.....*Charity.*
Grass.....*Submission. Utility.*
Guelder Rose.....*Winter. Age.*

Hand Flower Tree.....*Warning.*
Harebell.....*Submission. Grief.*
Hawkweed.....*Quicksightedness.*
Hawthorn.....*Hope.*
Hazel.....*Reconciliation.*
Heartsease, or Pansy.....*Thoughts.*
Heath.....*Solitude.*
Helenium.....*Tears.*
Heliotrope.....*Devotion, or I turn thee.*
Hellebore.....*Scandal. Calumny.*
Helmet Flower (Monkshood)..*Knight-errantry.*
Hemlock.....*You will be my death.*
Hemp.....*Fate.*
Henbane.....*Imperfection.*
Hepatica.....*Confidence.*
Hibiscus.....*Delicate Flower.*
Holly.....*Foresight.*
Holly Herb.....*Enchantment.*
Hollyhock.....*Ambition. Fecundity.*
Honesty.....*Honesty. Fascination.*
Honey Flower.....*Love sweet and secret.*
Honeysuckle.....*Devoted. Affection.*
Honeysuckle (Coral).....*The color of my fate.*
Honeysuckle (French).....*Rustic beauty.*
Hop.....*Injustice.*
Hornbeam.....*Ornament.*
Horse Chestnut.....*Luxury.*
Hortensia.....*You are cold.*
Houseleek.....*Vivacity. Domestic Industry.*
Houstonia.....*Content.*
Hoya.....*Sculpture.*
Hoyabella.....*Contentment.*
Humble Plant.....*Despondency.*
Hundred-leaved Rose.....*Dignity of mind.*
Hyacinth.....*Sport. Game. Play.*
Hyacinth, Purple.....*Sorrowful.*
Hyacinth, White.....*Unobtrusive lovliness.*
Hydrangea.....*A boaster.*
Hyssop.....*Cleanliness.*

Iceland Moss.....*Health.*
Ice Plant.....*Your looks freeze me.*
Imbricata.....*Uprightness. Sentiments of honro.*
Imperial Montague.....*Power.*
Indian Cress.....*Warlike Trophy.*
Indian Jesmine (Ipomœa).....*Attachment.*
Indian Pink (Double).....*Always Lovely.*
Indian Plum.....*Privation.*
Iris.....*Message.*
Iris, German.....*Flame.*
Ivy.....*Friendship. Fidelity. Marriage.*
Ivy, Sprig of, with Tendrils.....*Assiduous to please.*

Jacob's Ladder.....*Come down.*
Japan Rose.....*Beauty is your only attraction.*
Jasmine.....*Amiability.*
Jasmine, Cape.....*Transport of joy.*
Jasmine, Carolina.....*Separation.*
Jasmine, Indian.....*I attach myself to you.*
Jasmine, Spanish.....*Sensuality.*
Jasmine, Yellow.....*Grace and elegance.*
Jonquil.....*I desire a return of affection.*
Judas Tree.....*Unbelief. Betrayal.*
Juniper.....*Succor. Protection.*
Justicia.....*The perfection of female loveliness.*

Kennedia.....*Mental beauty.*
King-cups.....*Desire of riches.*

Laburnum.....*Forsaken. Pensive beauty.*
Lady's Slipper.....*Capricious beauty. Win me and wear me.*
Lagerstræmia, Indian.....*Eloquence.*
Lantana.....*Rigor.*
Lapageria Rosea.....*There is no unalloyed good.*
Larch.....*Audacity. Boldness.*
Larkspur.....*Lightness. Levity.*
Larkspur, Pink.....*Fickleness.*
Larkspur, Purple.....*Haughtiness.*
Laurel.....*Glory.*
Laurel, Common, in flower.....*Perfidy.*
Laurel, Ground.....*Perseverance.*
Laurel, Mountain.....*Ambition.*
Laurel-leaved Magnolia.....*Dignity.*
Laurestina.....*A token.*
Lavender.....*Distrust.*
Leaves (dead).....*Melancholy.*
Lemon.....*Zest.*
Lemon Blossoms.....*Fidelity in love.*
Leschenaultia Splendens.....*You are charming.*
Lettuce.....*Cold-heartedness.*
Lichen.....*Dejection. Solitude.*
Lilac, Field.....*Humility.*
Lilac, Purple.....*First emotions of love.*

Lilac, White.....*Youthful innocence.*
Lily, Day.....*Coquetry.*
Lily, Imperial.....*Majesty.*
Lily, White.....*Purity. Sweetness.*
Lily, Yellow.....*Falsehood. Gayety.*
Lily of the Valley.....*Return of happiness. Unconscious sweetness.*
Linden or Lime Trees.....*Conjugal love.*
Lint.....*I feel my obligations.*
Live Oak.....*Liberty.*
Liverwort.....*Confidence.*
Liquorice, Wild.....*I declare against you.*
Lobelia.....*Malevolence.*
Locust Tree.....*Elegance.*
Locust Tree (Green).....*Affection beyond the grave.*
London Pride.....*Frivolity.*
Lote Tree.....*Concord.*
Lotus.....*Eloquence.*
Lotus Flower.....*Estranged love.*
Lotus Leaf.....*Recantation.*
Love in a Mist.....*Perplexity.*
Love lies Bleeding.....*Hopeless, not heartless.*
Lucern.....*Life.*
Lupine.....*Voraciousness.*

Madder.....*Calumny*
Magnolia.....*Love of nature.*
Magnolia, Swamp.....*Perseverance.*
Mallow.....*Mildness*
Mallow, Marsh.....*Beneficence.*
Mallow, Syrian.....*Consumed by love.*
Mallow, Venetian.....*Delicate beauty.*
Mallow Creeana.....*Will you share my fortunes?*
Manchineal Tree.....*Falsehood.*
Mandrake.....*Horror.*
Maple.....*Reserve.*
Marianthus.....*Hope for better days.*
Marigold.....*Grief.*
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